DECEMBER 5, 1960

PAPER TRADE JOURNAL

Intensive Roundup of New Finishing Room Equipment
presents developments occurring over last 3 years, complete in this issue

Veteran Engineer and the Editor Debate Groundwood Mill Designs

Good Chipper Knife Care Starts With High Quality Steel Knives

Editorial Dept.
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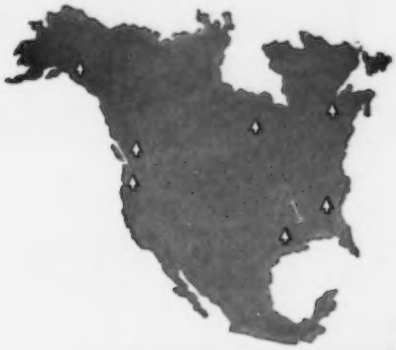
Ann Arbor, Mich.



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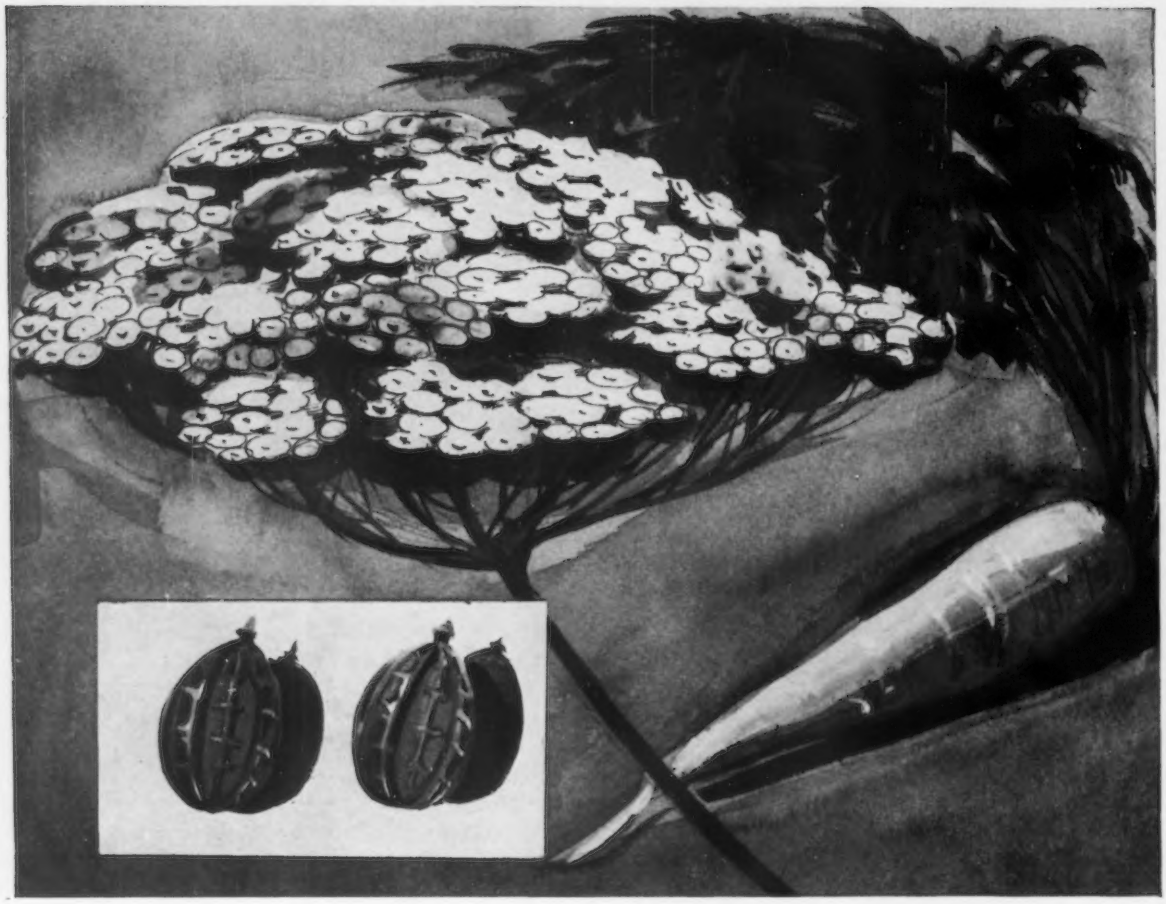

They're both seeds, but...

each is in a class by itself . . . like Wyandotte's PURECAL® O

You can't tell them apart at a glance . . . but the fact is, one of those seeds will produce the weed known as Queen Anne's lace, and the other its refined descendant, the most flavorful of carrots.

There are important differences in calcium carbonates, too. Wyandotte PURECAL O is in a class by itself! You see, Wyandotte's double refining — a unique reaction process — yields precipitated calcium carbonates that exceed U.S.P. purity standards. Particles, 0.15 micron in size, are agglomerate-free, and consistently cubical in shape. Whiteness and dry-hiding power are *exceptional.*

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FIRST to hardness test each bar in every filling

FIRST to import and use Bethabara for wood separators

FIRST to introduce Microlyzed custom processing

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ANNOUNCING

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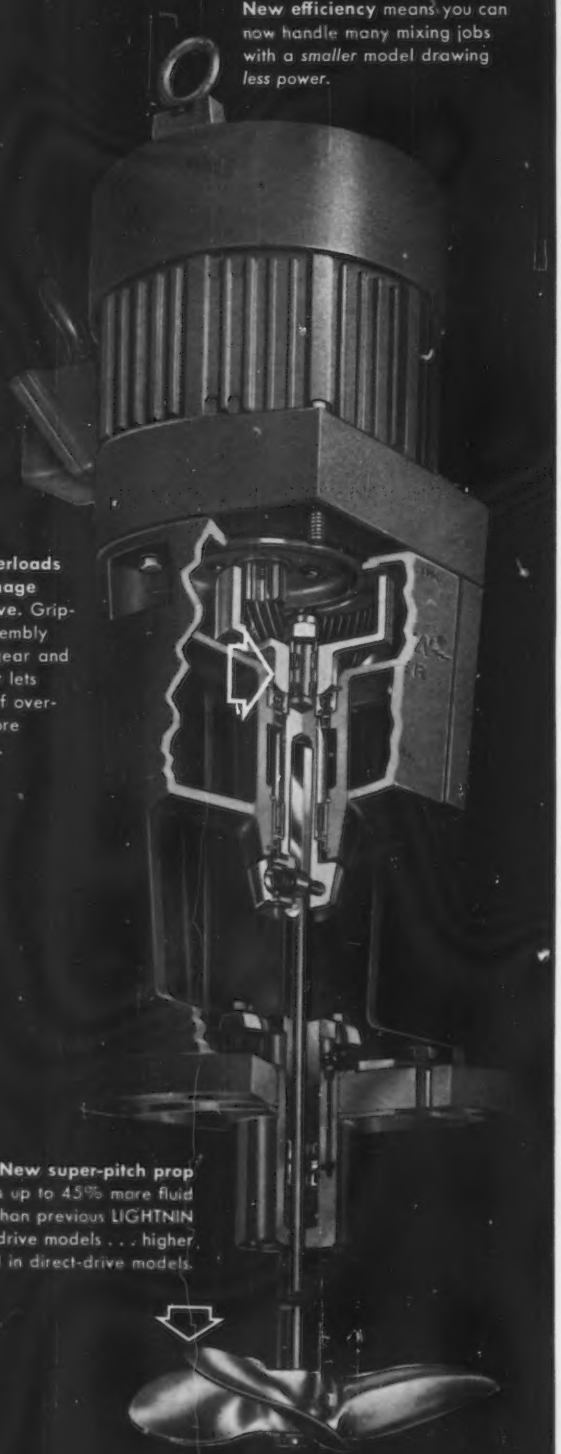

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PORTABLES. Simple, quick-acting shaft chuck is always above liquid level. New indexing makes it a snap to set mixer at the correct angle. In nine sizes, ⅛ to 3 hp, gear drive or direct drive. Request Bulletin B-520.

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PUBLISHED WEEKLY SINCE 1872

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REMEMBER THESE DATES

January 24-27, Technical Section, CPPA Annual Meeting, Queen Elizabeth Hotel, Montreal, Canada

February 20-23, Paper Week in New York

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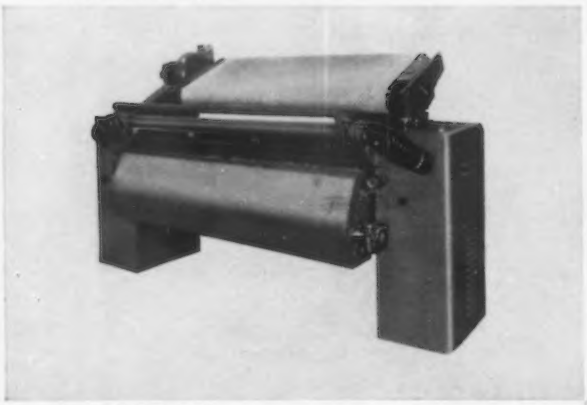
Reverse Roll Coater

Sequential Knife Coater



Microjet Air Blade Coater

WALDRON ADVANCE DESIGN *standard* COATERS SOLVE MANY *special* COATING PROBLEMS

As manufacturers of coating machines for the web processing industry for over a century, Waldron engineers have been called upon to solve innumerable coating problems. The Waldron "standard" line of advanced design coating like those illustrated reflects this vast experience.

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Complete coating lines including web handling equipment with our Ross Division convection dryers are engineered by Waldron as a single responsible source of supply.

Our engineers are ready to work with you to select the equipment, and our extensive pilot plant facilities are at your disposal for tests.

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WALDRON-HARTIG DIVISION
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Box 791 New Brunswick, N. J.
"Technical competence in web process machinery"

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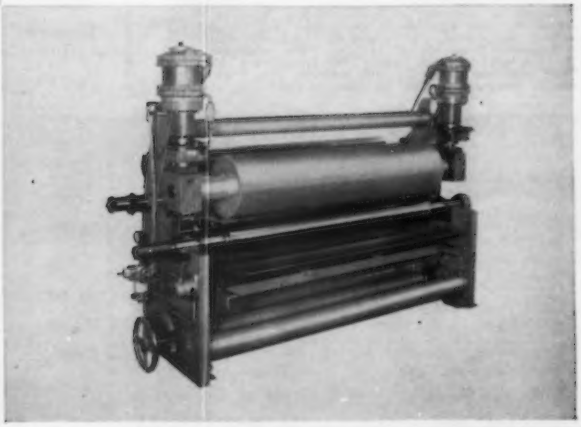

Single Color Gravure Printer

Which of these 3 products and services can you use from BECCO?

New Cold Caustic Bleach Process

Looking for a way to use greater amounts of low-cost, more plentiful pulp—without capital investment for bleach equipment? Then let a Becco Sales Engineer show you our new technique* which allows you to bleach in the same equipment regularly used for the manufacture of cold caustic pulp.

In this new process, peroxide bleach liquor is added at the Bauer Refiner, and bleaching occurs during the refining operation. Bleach response depends on refiner densities.

Up to 20 points brightness increase has been obtained in commercial operations to date, and with no additional steam costs, no holding time, and no excessive chemical costs.

Becco can assist you immediately in setting up a production run and evaluating results. First step: use the coupon to let us know you're interested.

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No. 32 — H_2O_2 Bleaching of Chemicals and Mechanical Pulps.

No. 47 — Peroxide Bleaching of Pulps.

No. 48 — High-Density Pulp Bleaching.

No. 64 — Development Studies on Last-Stage H_2O_2 Bleaching of Alkaline Pulps.

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Becco's Four-Fold Engineering Service Program—offered free—includes:

1. Comprehensive survey of your facilities.
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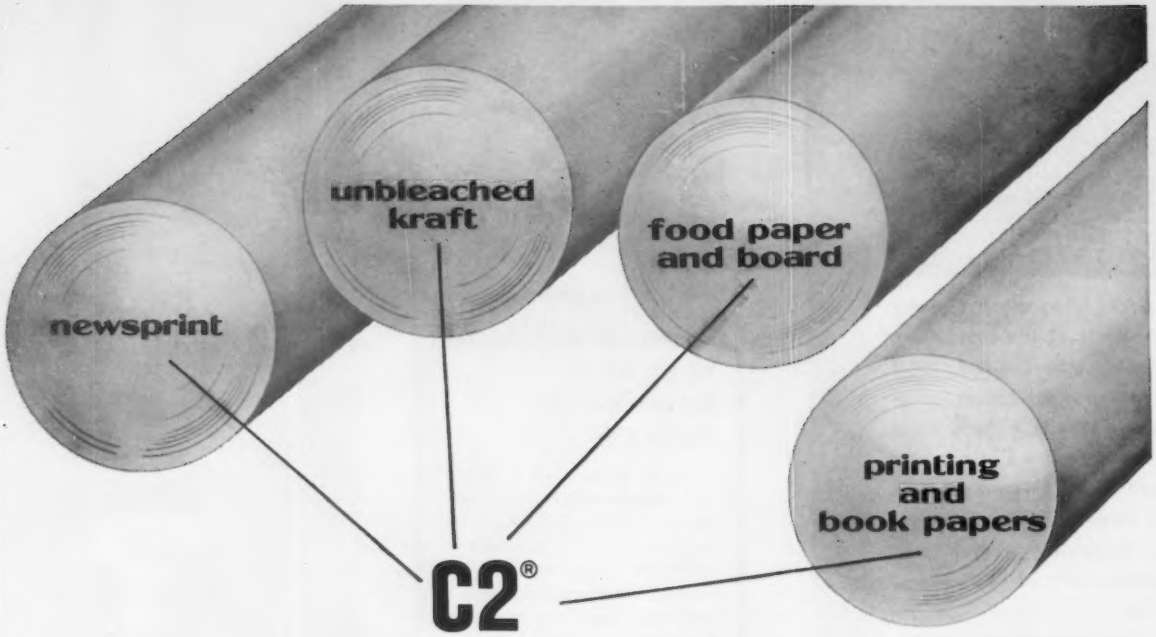


C2®

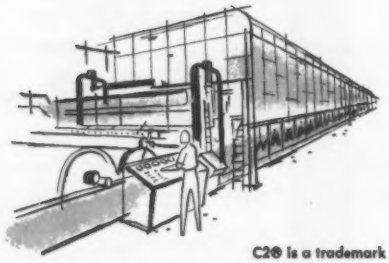
the new slimicide

★ **FDA approved**

★ **effective**

★ **easy-to-use**

★ **economical**



C2® is a trademark

Food and Drug Administration states that sodium chlorite slimicide is not a food additive in paper manufacture because it cannot become a component of food through this use. C2, of course, is the Olin Mathieson trademark for sodium chlorite slimicide.

Extensive experience in many mills demonstrates that C2 is an effective, low-cost slimicide for machines producing many types of paper including newsprint, unbleached kraft, food paper and board, and printing and book papers. No detrimental side effects have been observed.

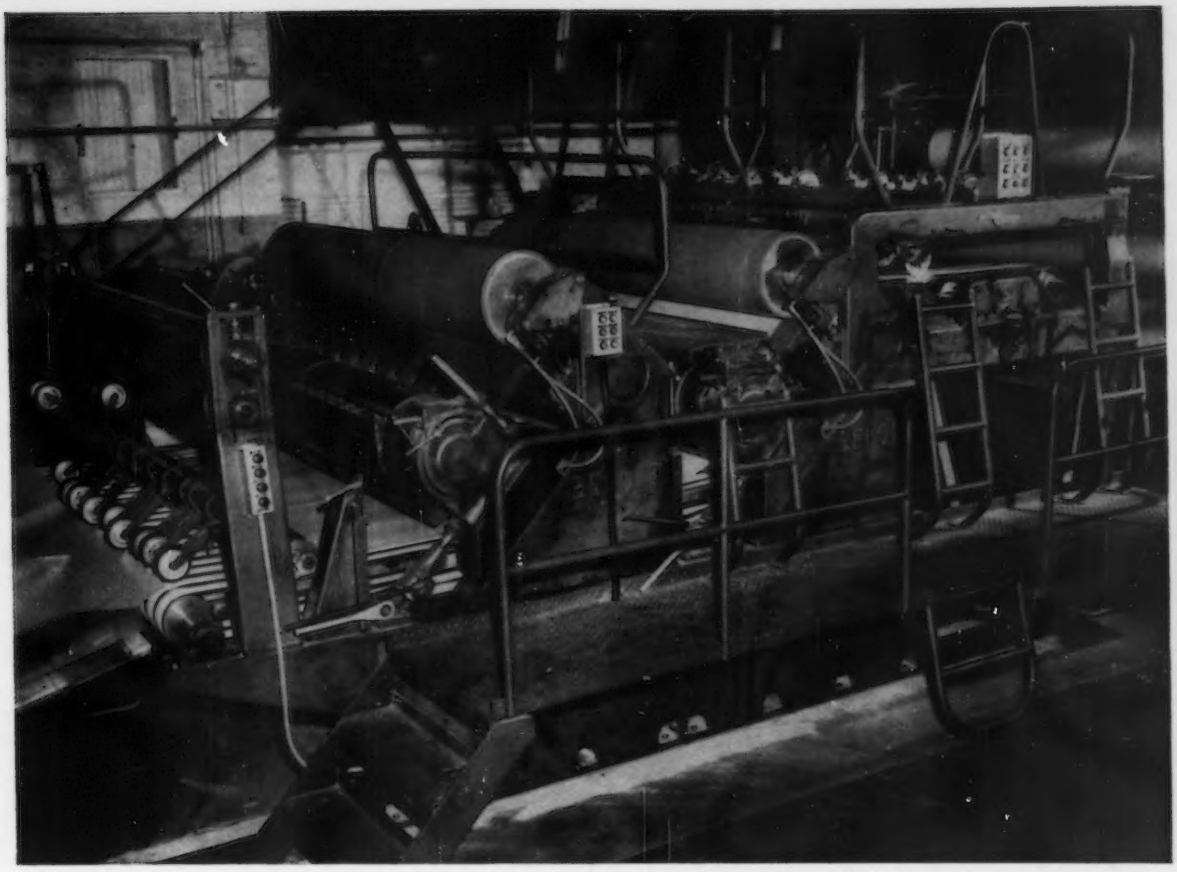
C2 is readily soluble in water and is non-corrosive to equipment.

Average use level is 10 to 20 cents per ton of pulp. C2 is available in quantities ranging from one pound samples to 100 pound drums in truckloads and carloads. C2 also can be shipped as a 50% solution in tank cars or highway transports.

For assistance or further information, write the Sales Development Department. Baltimore 3, Md. Data sheet available upon request.

7755

Olin Mathieson
CHEMICALS DIVISION, BALTIMORE 3, MD.



Packaging Corporation of America, Central Fibre Products Division., Hutchinson, Kansas

New Beloit Duplex Cutter and Slitter

The cutter pictured above is a completely new Beloit design. You will find that its thoroughly proven components, rugged and dependable, contribute to new high standards of production efficiency. Outstanding features are listed at right.

Look to Beloit Eastern Corporation to furnish you with the finest in finished product processing equipment:

WINDERS · RECLAIM WINDERS · CUTTERS · SLITTERS · SUPERCALENDERS · ROLL WRAPPERS · ROLL LOWERING TABLES · ROLL AND SHAFT HANDLING EQUIPMENT · CONVEYORS · UNWIND STANDS AND TRU-TENSION CONTROLS · AND OTHER EQUIPMENT FOR THE PAPER AND ALLIED INDUSTRIES

- Improved fly knife and bed knife assembly assure accuracy of sheet length and squareness of cut. Draw control between nip rolls maintains stable operation.
- Individually air-actuated slitters mounted on a common shaft. Each slitter assembly is designed with a preset toe-in and offset for minimum operator attention and maximum blade life.
- Cutter knife assemblies are symmetrical, permitting adaptation to a simplex, duplex, or even a triplex arrangement.
- Controls are logically placed for convenience of the operator.

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BELOIT EASTERN CORPORATION

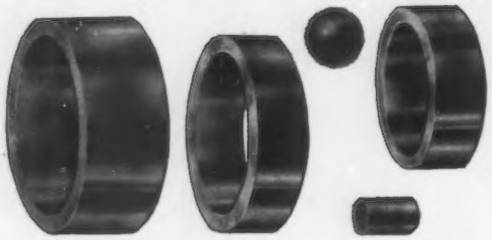
DOWNINGTOWN, PENNSYLVANIA

Member Beloit Group

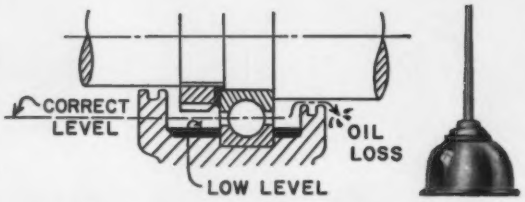
DISTRIBUTOR DAN, the SKF bearing man, tells

WHY BEARINGS BECOME OVERHEATED

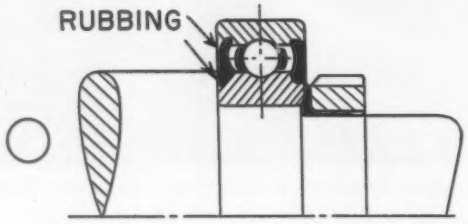
and how to correct the conditions that cause excessive heat.



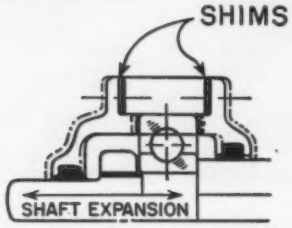
LOOK FOR THIS SYMPTOM. Discoloration of a bearing's rings, balls or rollers is a sure sign of overheating. The color is usually a gun-metal blue or bluish black.



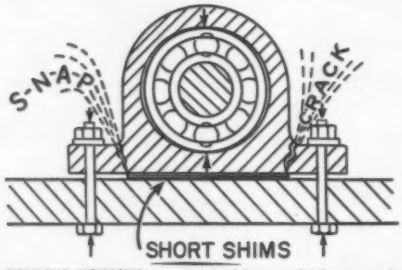
IMPROPER LUBRICATION OR LUBRICANT accounts for most cases of overheating. In pillow blocks, if oil is specified, fill only to the center of the lowest ball or roller in the bearing. If it's grease, the lower half of the pillow block should be filled. Therefore, be sure you're using the right lubricant—**in the proper quantity.**



RUBBING is a frequent culprit. Check the running clearance of the bearing seal. If it rubs against the shaft shoulder, re-machine the shoulder, to allow proper clearance. Bent lock-washer prongs are sometimes to blame. Straighten them or replace the washer.



EXTERNAL HEAT, conducted through the shaft, can make an inner ring expand excessively. It's usually the result of using a bearing with inadequate internal clearance. Make sure the replacement bearing is exactly the same as the original bearing. Should the markings be indistinct, consult an **Authorized SKF Distributor.**



THE BEARING HOUSING may be to blame—if it's warped or if the bore is distorted and out-of-round. Check to see whether the bore is pinching the bearing and relieve by scraping the bore. Make sure, too, that the pedestal surface is flat and that any shims cover the entire base area.

Baffled by a bearing problem? Whether it's selection, mounting, or maintenance—consult your Authorized SKF Distributor. He's staffed to help you keep them running smoothly and he stocks all the bearing types and sizes you need.

SKF

AUTHORIZED DISTRIBUTOR

6010

Spherical, Cylindrical, Ball, "Tyson" Tapered and REED Miniature Bearings

EVERY TYPE—EVERY USE

SKF®

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

*REG. U. S. PAT. OFF.

U.F. Concentrate in Starch-Clay Coatings Boosts Wet Rub Resistance, Printability of Paper

Latest pilot runs show you can improve coatings using urea formaldehyde concentrate to insolubilize a variety of commercial starches

The addition of U.F. Concentrate-85, Nitrogen Division's urea formaldehyde product, to starch-clay colors formulated with a variety of commonly used starches, produces coated paper with improved wet rub resistance and printability.

PRESERVATIVE ACTION

An added advantage: The preservative action of the contained formaldehyde in U.F. Concentrate-85 retards starch deterioration, sharply reducing unpleasant odors common in hot weather.

These beneficial effects were demonstrated in an extensive series of trial runs on a high-solids pilot plant roll coater operated under plant conditions. The tests were conducted to determine optimum conditions for improved coatings.

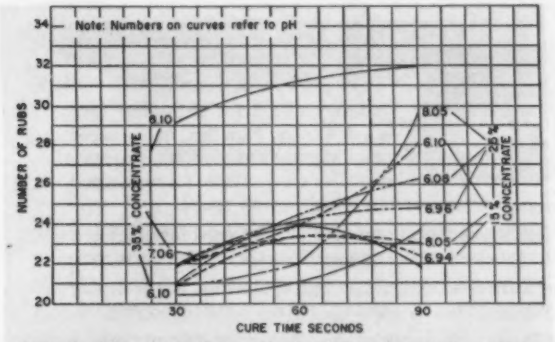


Figure 1 — Effect of cure time on wet rub resistance of starch-clay coatings formulated with Flokote starch plus varying amounts of U.F. Concentrate-85 and applied at different pH levels.

Variables measured were: pH, curing time, urea formaldehyde concentration and type of starch used.

Starches used were National Starch and Chemical Corporation's Nadex 350, a corn dextrin; Flokote, an oxidized starch; and Amioca. Adhesive concentration in all cases was 16-18%, based on weight of dry clay.

WET RUB RESISTANCE

Wet rub resistance, determined on American Instrument Co.'s wet rub tester, increases with cure time. How great an increase depends on the starch, the more reactive starch showing the more pronounced effect. Figure 1, on which pH and amount of U.F. Concentrate used in the trials are parameters, shows this relationship for Flokote.

In all cases, a 25% concentration of U.F. Concentrate-85 (by weight, based on weight of dry starch) gives better results than a 15% addition. However, more than 25% is not generally needed for satisfactory wet rub resistance.

The effect of pH varies, but made no critical difference within the pH range investigated.

PRINTABILITY

Printability, determined by IGT printability tests run on calendered sheets, increases with cure time for a starch such as Flokote (Figure 2). Figure 2 also shows that for Flokote, concentrations of U.F. Concentrate-85 above 25% decrease printability, and that printability decreases with increasing pH.

With the more reactive Amioca starch, neither cure time nor pH has much effect on printability. However, printability increases with the amount of concentrate added.

ACTION OF U. F. CONCENTRATE

Experimental results show that U.F. Concentrate-85 is composed of methylolureas in equilibrium with free formaldehyde. All the contained formaldehyde is available for further reaction — in this case, to form stable, resinous products involving chemical linkages of the starch and cellulose. These are the same reactions for which coaters use formaldehyde and its methylol derivatives.

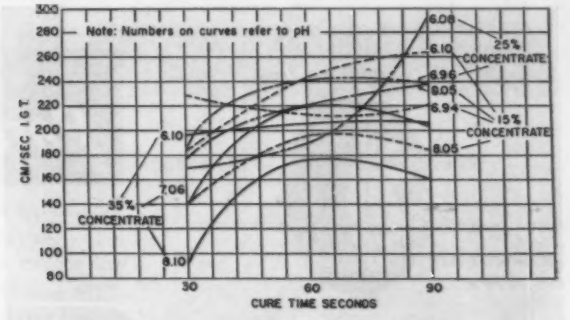


Figure 2 — Effect of cure time on printability of paper coated with starch-clay colors containing Flokote starch plus varying amounts of U.F. Concentrate-85 and applied at different pH levels.

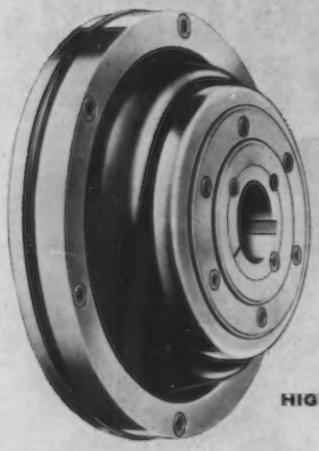
U.F. Concentrate-85 contains 85% active ingredients — 60% formaldehyde and 25% urea, by weight. You'll find complete information on it in Allied Chemical's 36-page brochure, "U.F. Concentrate-85". Also available is a reprint of an article describing details of its use to improve starch-clay coatings. Write for your copies today. 2819

BASIC TO AMERICA'S PROGRESS

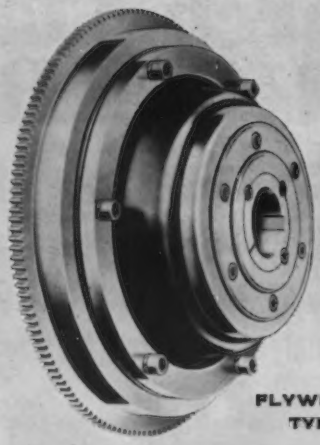
Allied Chemical

NITROGEN DIVISION

Dept. UF 7-50-3, 40 Rector Street, New York 6, New York



HIGH SPEED TYPE

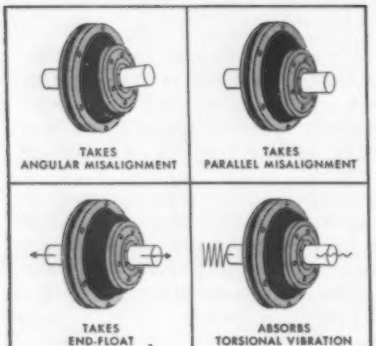


FLYWHEEL TYPE

NOW! THE COUPLING WITH THE 4-WAY FLEX IN TWO NEW TYPES — HIGH SPEED AND FLYWHEEL

STANDARD TYPE

THE 4-WAY FLEX OF PARA-FLEX



DODGE **Para-flex**

Industry asked for this—and here it is! Dodge Para-flex, the unique coupling that swallows up misalignment, is now available for high speed applications, and for high torque at either high or low speed.

The new Dodge High Speed Para-flex is specially designed for operation with motors and internal combustion engines that turn up to 5230 rpm.

The new Flywheel Para-flex, with the same capabilities, has a flexing element that bolts directly to the flywheel of internal combustion engines.

Like the Standard Type (with capacities up to 2000 hp at 1080 rpm) these new Para-flex Couplings feature a modern, tire-like flexing element that handles angular and parallel misalignment, end-float (or any combination) and absorbs torsional vibration. The amazing performance of Para-flex Couplings is a matter of record in thousands of installations.

Ask your Dodge Distributor—or write us for new technical bulletin.

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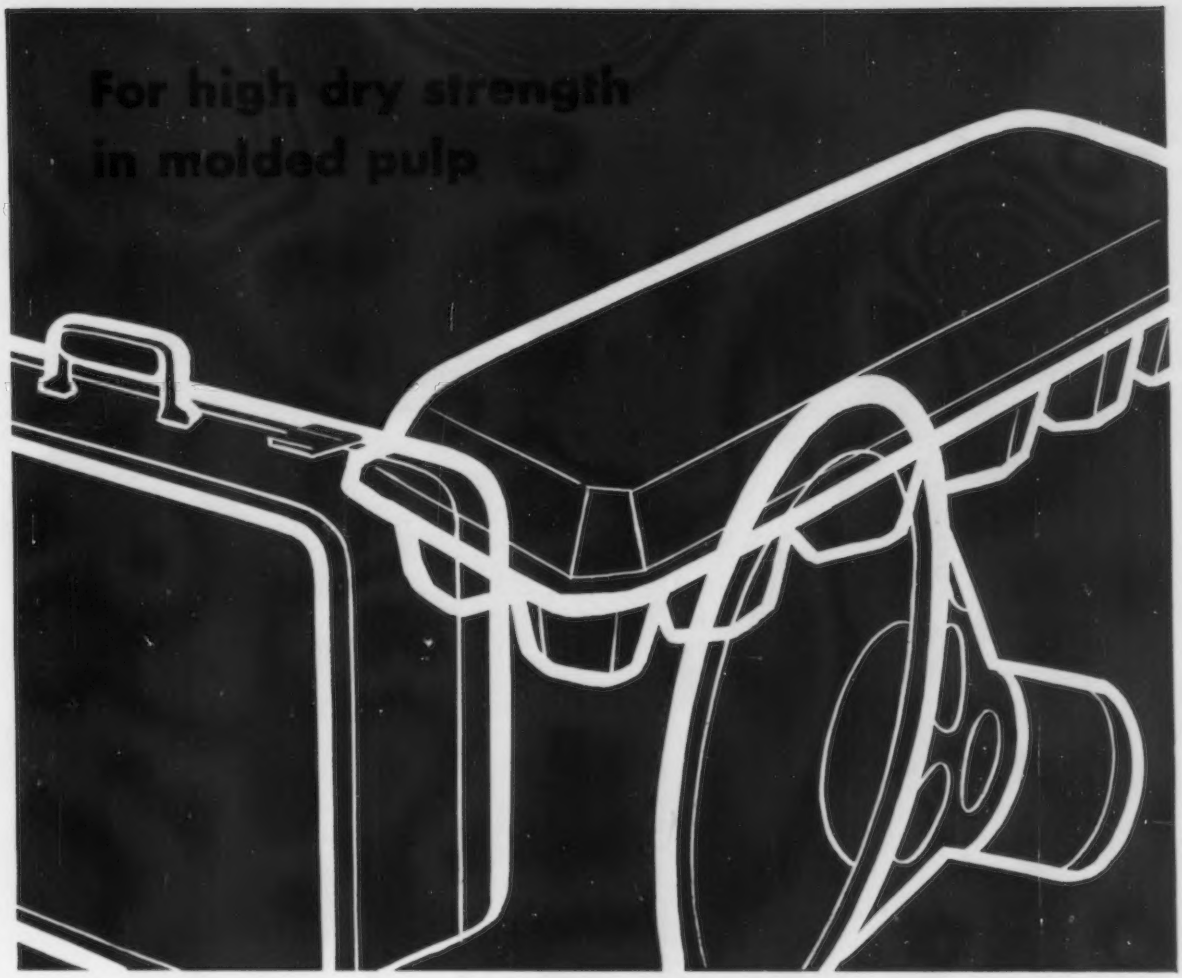
CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look under "Dodge Transmissioneer" in the *white* pages of your telephone directory, or in the yellow pages under "Power Transmission Equipment."



Shawinigan GELVA® polyvinyl acetate emulsions

When toughness and rigidity are properties necessary in your molded pulp products investigate GELVA emulsions. Substantially increased strength and stiffness can be obtained with relatively small quantities of emulsion. The chart, right, presents data based on laboratory tests performed with three GELVA emulsions representative of Shawinigan's diversified line.

Shawinigan's products for paper applications include both GELVA polyvinyl acetate emulsions and resins and GELVATOL polyvinyl alcohol resins. A wide variety of standard grades is always available. Shawinigan's research staff and laboratories are ready to assist you with formulations for special applications. Write to Shawinigan Resins Corporation, Dept. 7S, Springfield 1, Massachusetts.

	% Resin add-on (dry)	Flexural Strength lbs/in²	Relative Rigidity	Gain in weight 24 hrs water immersion at 25°C.
Control — no resin additive	0	3000	1.00	240%
Gelva Emulsion S-51	10	6330	1.97	115%
Gelva Emulsion C-3	10	5520	1.91	140%
Gelva Emulsion S-55	10	4480	1.43	136%

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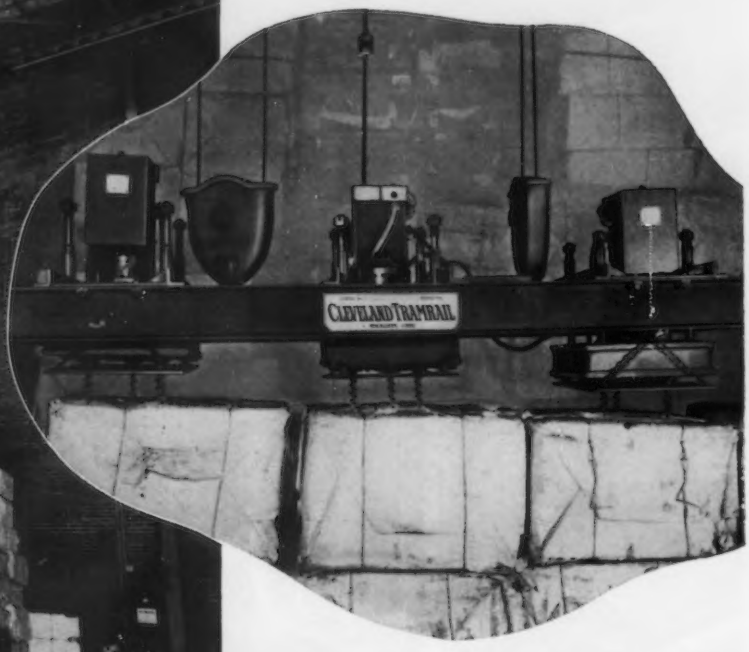
GELVA® *polyvinyl acetate emulsions by* **SHAWINIGAN RESINS**

SCREW GRAB REDUCES PULP HANDLING COSTS

200 TONS EASILY HANDLED PER 8-HOUR DAY AT GREATLY REDUCED COST



BALES PILED 35 FT. HIGH

The crane at left equipped with motor-operated screw grab above handles 3 bales at a time. All motions of crane and grab are controlled by operator in crane cab. This building has 5000 tons capacity and is 160'-0" x 50'-0" x 45'-0" truss height.

Man-hours spent handling bales of pulp are greatly reduced when a Cleveland Tramrail overhead crane and screw grab are used. And more pounds are stored per square foot, because no aisleways are required and also because of high piling. Safety is improved.

As a result, great savings are made on both warehousing and handling of pulp. Equipment like this pays for itself in a surprisingly short time. Let us give you details.

GET THIS BOOKLET!

Gives details on a 5000 ton and a 1100 ton pulp warehouse.

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THE CLEVELAND CRANE & ENGINEERING CO.
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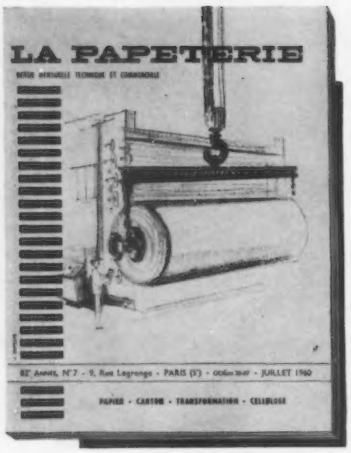

je suis La Papeterie

Those interested in increasing sales to the expanding paper and pulp market in Europe are invited to explore this magazine:

Since 1877 LA PAPETERIE has been known as the French language technical magazine for the paper industry, widely read throughout Europe. Specimen copy, rates and other information may be obtained from our representative nearest to you:

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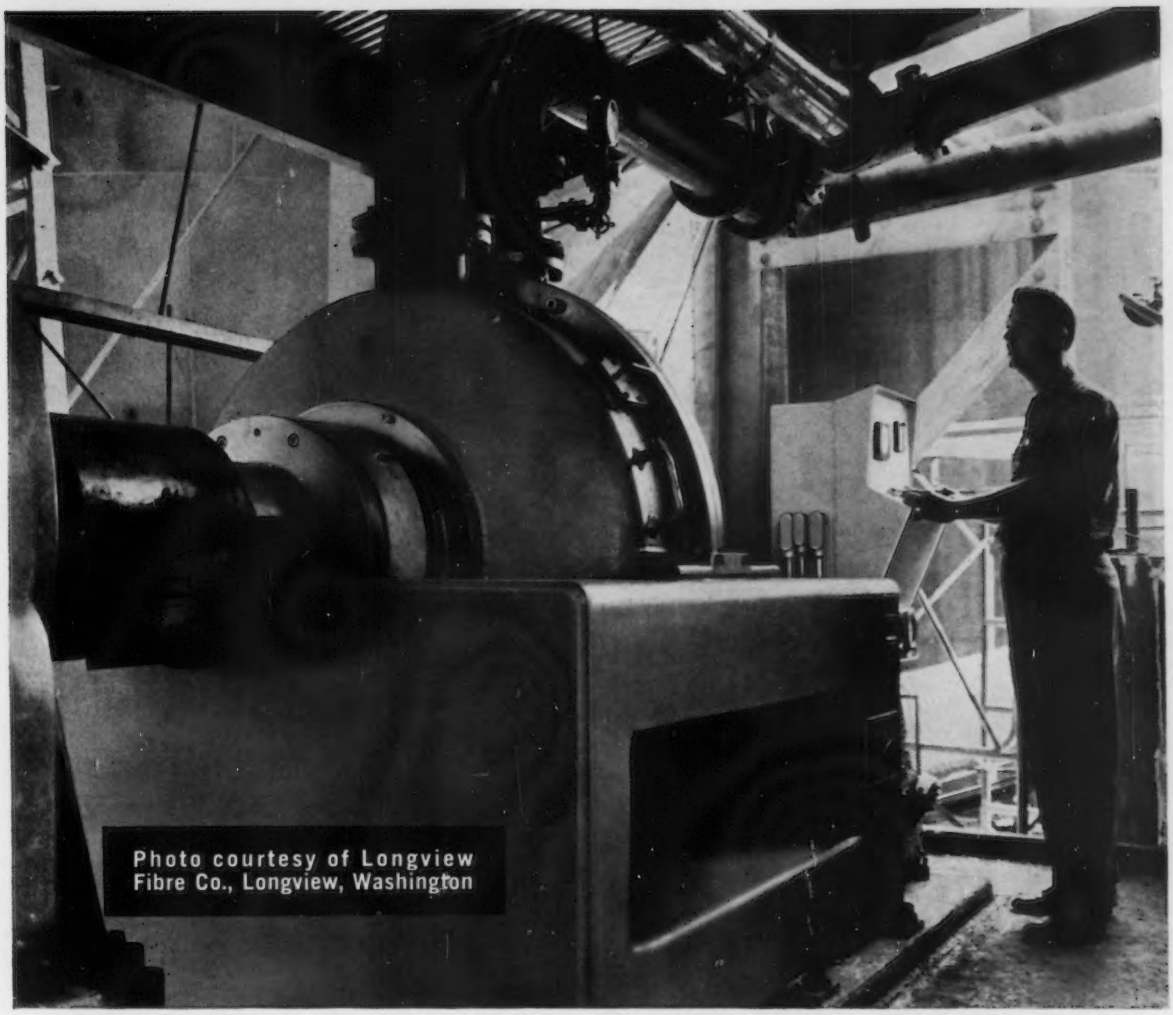


NEWEST IN PULP PREPARATION
44" Pump-Through Refiner

...by *BAUER, of course!*

Simplified design, new engineering developments and its high capacity put the Bauer No. 441—44" Pump-Through Refiner far ahead of ordinary refining equipment.

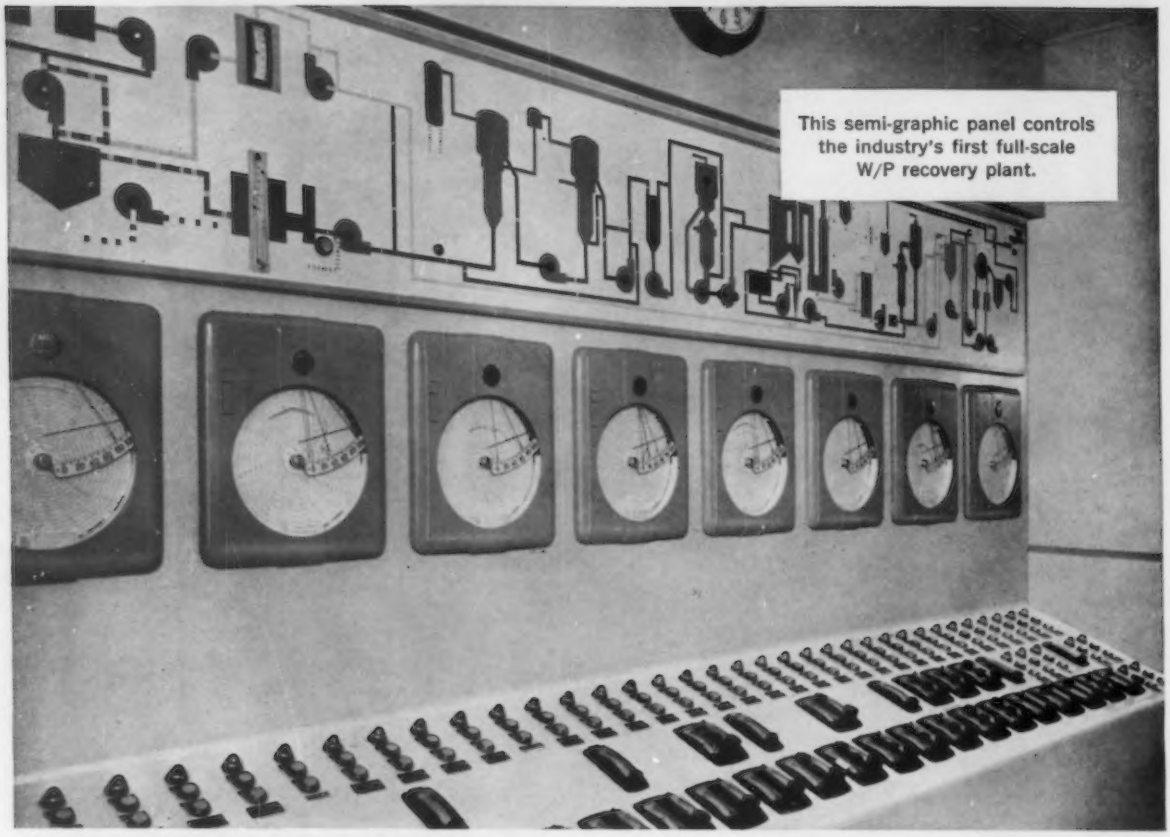
A new bearing design eliminates overload problems. Bauer "computer-proved" engineering provides solid rigidity throughout the unit. Hydraulic control of refining is fast and accurate and can be automated easily. To get excellent pulp quality at low power consumption and with a minimum of downtime, put a Bauer No. 441 in your mill.

Write for descriptive bulletin.

THE BAUER BROS. CO.

Springfield, Ohio

IN CANADA: THE BAUER BROS. CO. (CANADA) LTD.
Brantford, Ontario



This semi-graphic panel controls the industry's first full-scale W/P recovery plant.

NERVE CENTER for first installation of W/P recovery process

This semi-graphic panelboard is regarded as one of the major advances in process instrumentation for the pulp and paper industry.

The reasons:

**A New Process is Involved:*

This panelboard is located at the new recovery plant of Consolidated Water Power & Paper Company, Wisconsin Rapids, Wis. It is the nerve center for the first commercial-scale installation of the Western Precipitation Corporation's new recovery process. Long sought by the industry, the W/P system provides a new approach to processing both acid sulphite and semi-chemical spent liquors.

**Panel Represents Advanced Automation*

The panel is no mere mounting for controls, recorders and control stations . . . it provides an exceptionally advanced degree of intelligence to reduce manpower required in the operation of a highly complicated processing system.

This comprehensive installation is another example of how Bailey is working with pulp and paper processors toward greater degrees of automation, efficiency and quality control.

Put Bailey's 40 years of engineering leadership to work for you. Your Bailey Engineer will be happy to review your plant operation and to suggest applications that will bear immediate return. Check phone book for nearest Bailey District Office, or write direct to our Pulp and Paper Division.

**For further information,* write to the Bailey Meter Company for Reprint No. C-30, "Consolidated Demonstrates Its Recovery of Spent Sulphite Liquors."

P150-1

PULP AND PAPER DIVISION

BAILEY METER COMPANY

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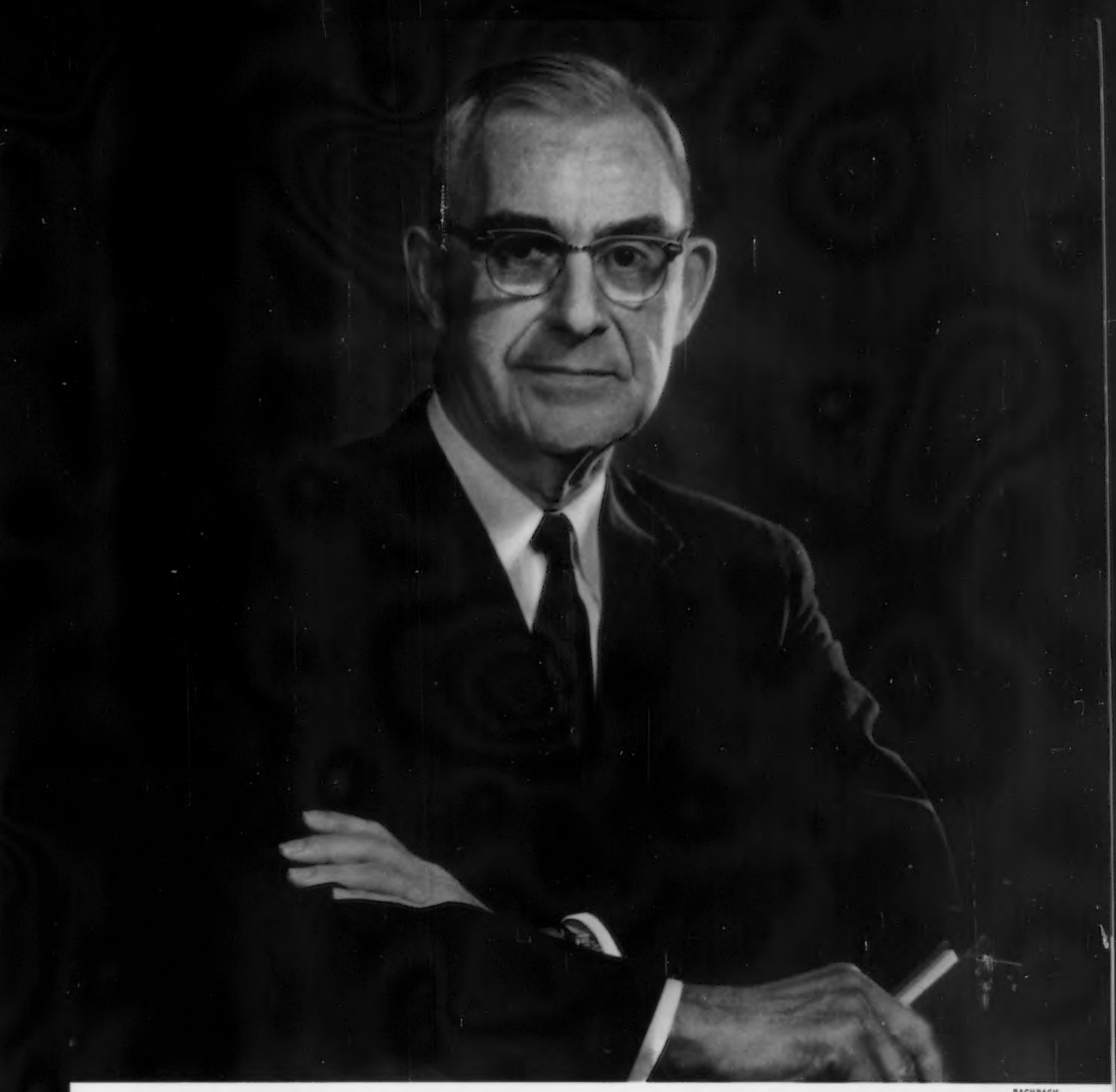
In Canada—Bailey Meter Company Limited, Montreal



BACHRACH

SERVICE:

In addition to providing papermakers with felts of the highest quality, we at Albany Felt Company recognize a second, most basic obligation to our customers . . . *service.*

But service can only be as good as management's intent. The quality of the service we have offered has been a special pride of our company for 65 years.

May I reaffirm to my numerous friends in the paper industry that the Albany Felt Company will continue its dedication to the firm principle that our service to papermakers shall be complete and unexcelled.

John C Standish

President and
Chairman of the Board of Directors

ALBANY FELT COMPANY
ALBANY, N.Y.

AF

Dedicated To Paper Industry Progress

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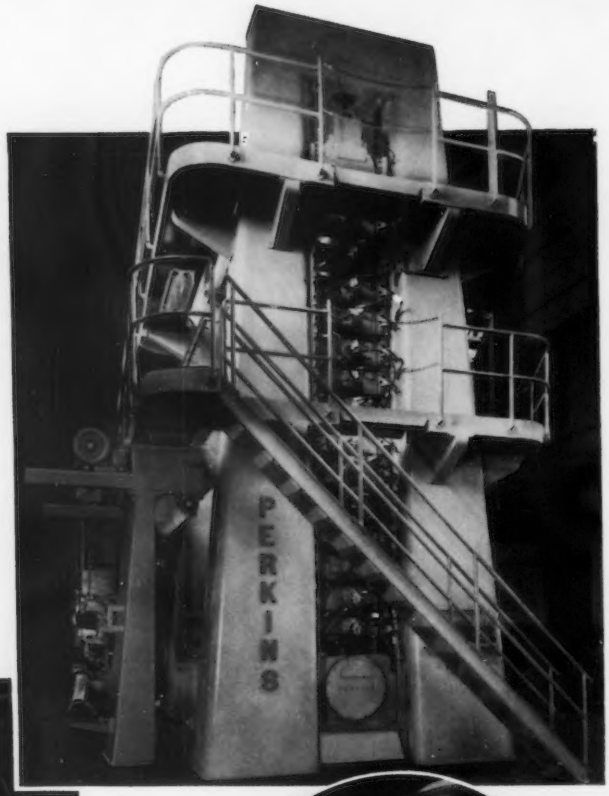
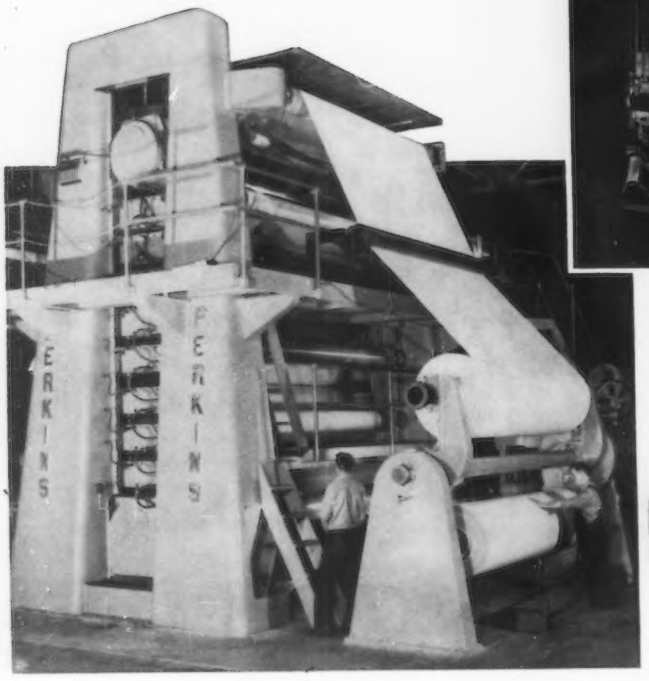
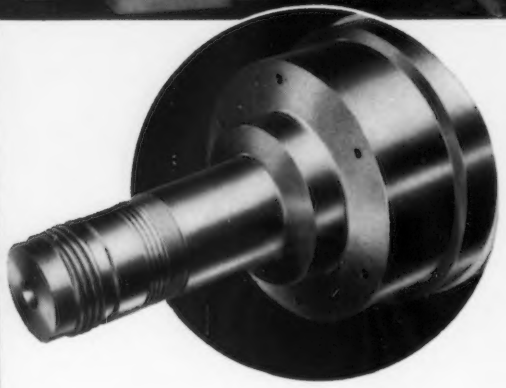
2 PERKINS Speed and Pressure GIANTS for the Paper Industry







"Engineering features years ahead"

Many exclusive engineering features in rugged construction and appearance.

These two calenders are designed especially for the paper mills demanding high speed, heavy pressures and maximum performance in producing the best in paper finish.

Machines of this type will accomplish many years of economical operation in the paper mills.

Perkins Rolls for modern Supercalenders — up to 30" diameter, 200" face.

B. F. PERKINS & SON, INC.
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Illustration courtesy American Stores Co.

Appetizing letterpress...on RHOPLEX®-coated stock

Smell the sticky buns? The scented ink merely heightens the illusion created by the combination of superb letterpress printing and the flawless printing surface made possible by the RHOPLEX 100% Acrylic emulsion binder in the paper coating. RHOPLEX is thermoplastic, flows and levels uniformly and buffs to a very high gloss under the heat and pressure of the calender rolls. Low viscosity of RHOPLEX emulsions permits high solids formulations which are easy to handle and to apply uniformly. RHOPLEX emulsions are ideal binders for coatings on both printing papers and paper board.

Write for the 16-page booklet, "RHOPLEX Acrylic Emulsions in Paper Coatings", for full formulating information.

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RHOPLEX

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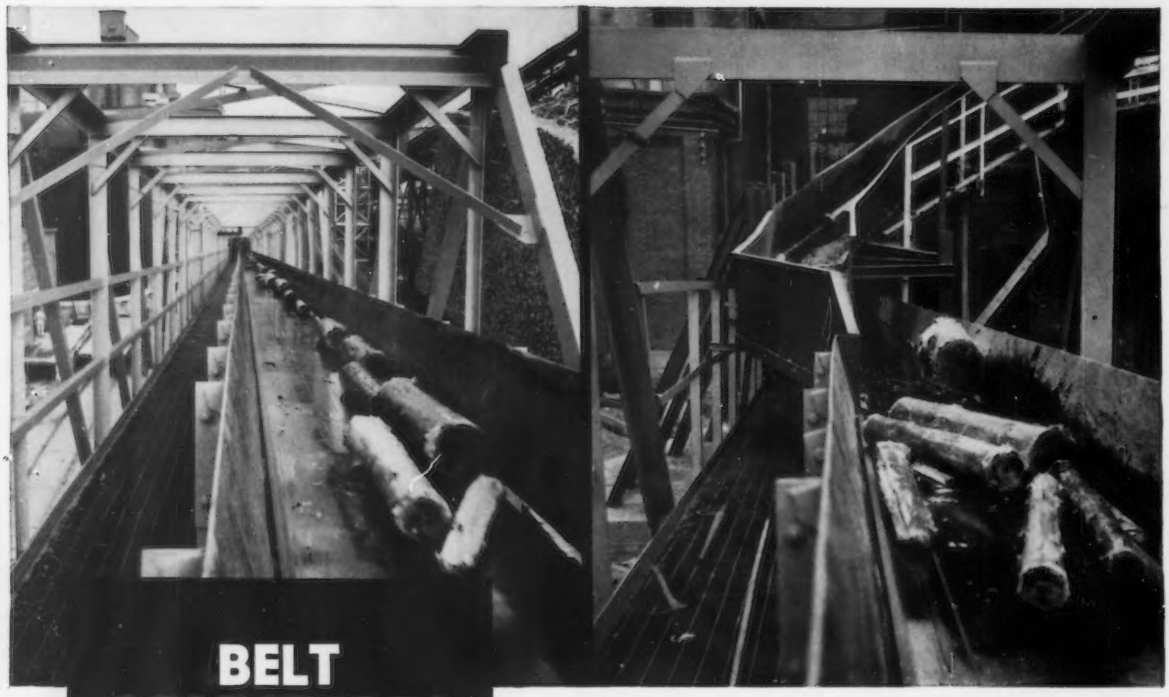
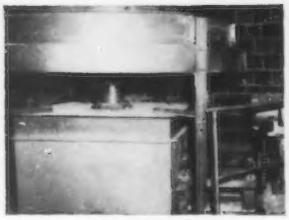


BELT CONVEYORS handle greater tonnage at lowest cost

Rugged S-A Belt Conveyor Systems efficiently handle logs, chips and pulp for storage, reclaiming or conveying to processing. For over a half century, STEPHENS-ADAMSON log and wood chip belt conveyor systems consistently attain new records in fast, efficient, low maintenance operations.

Find out now how S-A conveying equipment can be applied to increase your own bulk materials handling efficiency.

S-A ENGINEERED PRODUCTS FOR LOG AND WOOD CHIP HANDLING SYSTEMS



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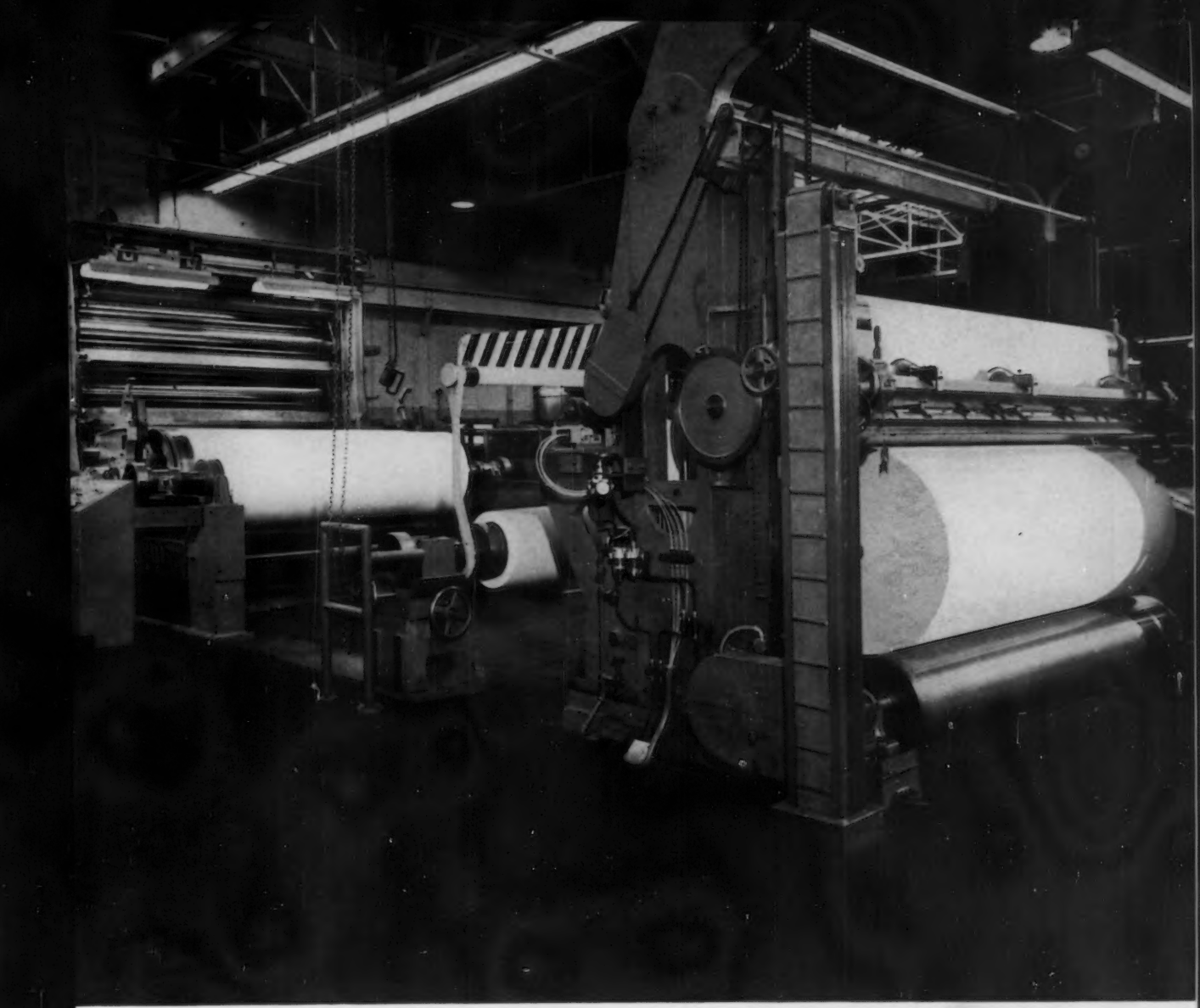


Mill Modernizes...Eliminates Rewinding... Saves Time and Trouble

Extensive modernization by the Nekoosa-Edwards Paper Company includes the Kidder 110-inch Superspeed Mill Winder shown above — an important new installation at the Nekoosa plant.

In one operation this machine slits and winds rolls up to 60″ in diameter . . . operates at 3000 feet per minute . . . has a multiple disc, water-cooled unwind brake and automatic, pneumatic tension control.

Advantages like these will help you meet today's requirements for paper machine efficiency speed and cut your finishing room costs. For details write to Kidder Press Company, Inc., Dover, N. H. Eastern Sales Office: Empire State Bldg., New York 1, N. Y. Midwest Sales Office: 400 Washington Bldg., Madison 3, Wis. West Coast Representative: Bojanower Machinery Service Corp., 5270 E. Washington Blvd., Los Angeles 22, California.

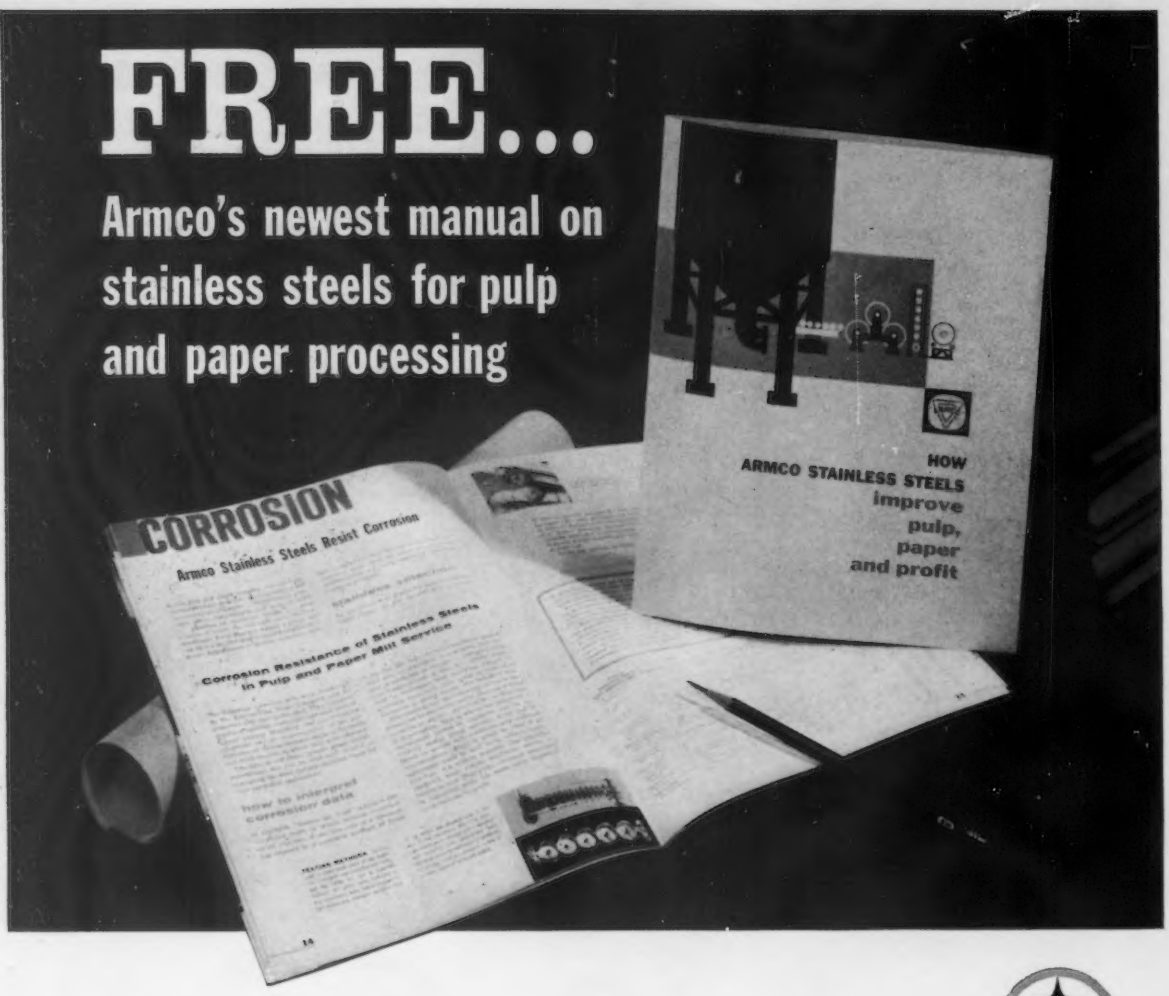
Make Good Impressions Faster with

Kidder

Slitters and Rewinders, Flexoprinter®, Letterpress and Gravure Presses

FREE...

Armco's newest manual on stainless steels for pulp and paper processing



This 32-page manual is completely new. It replaces a 12-page booklet Armco produced several years ago—a good indication of the expanding use of stainless steels in pulp and paper mills.

This manual was prepared for technical people who must maintain quality and quantity of production, design equipment, or specify materials of construction. Experiences of mill engineers, equipment performance histories, practical technical information—especially the section of authoritative corrosion resistance data—are presented to show how Armco Stainless Steels offer profit-making advantages in pulping, bleaching and paper making.

Stainless Steel

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Armco Steel Corporation
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Send me a copy of your new booklet, **"How Armco Stainless Steels Protect Pulp, Paper and Profit."**

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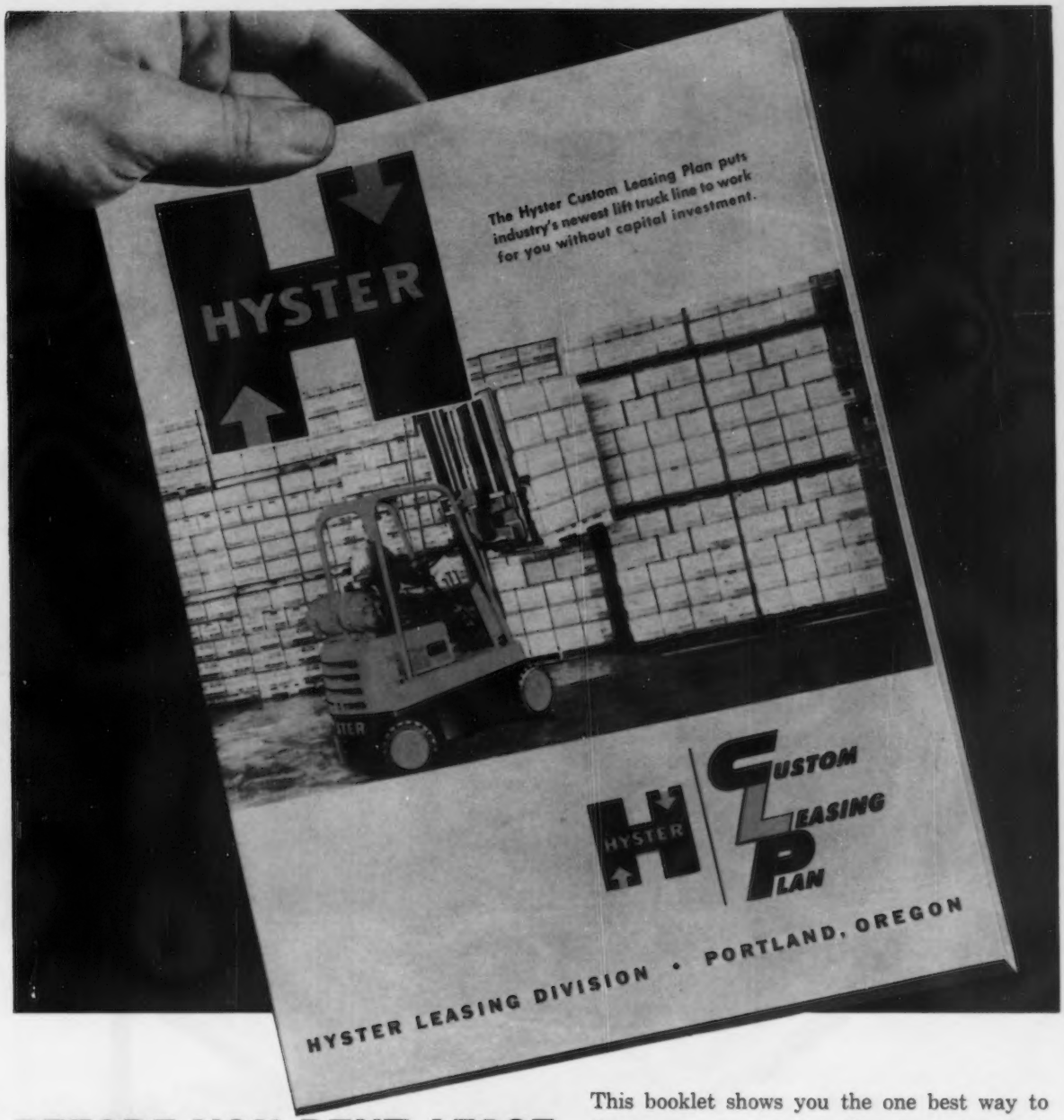
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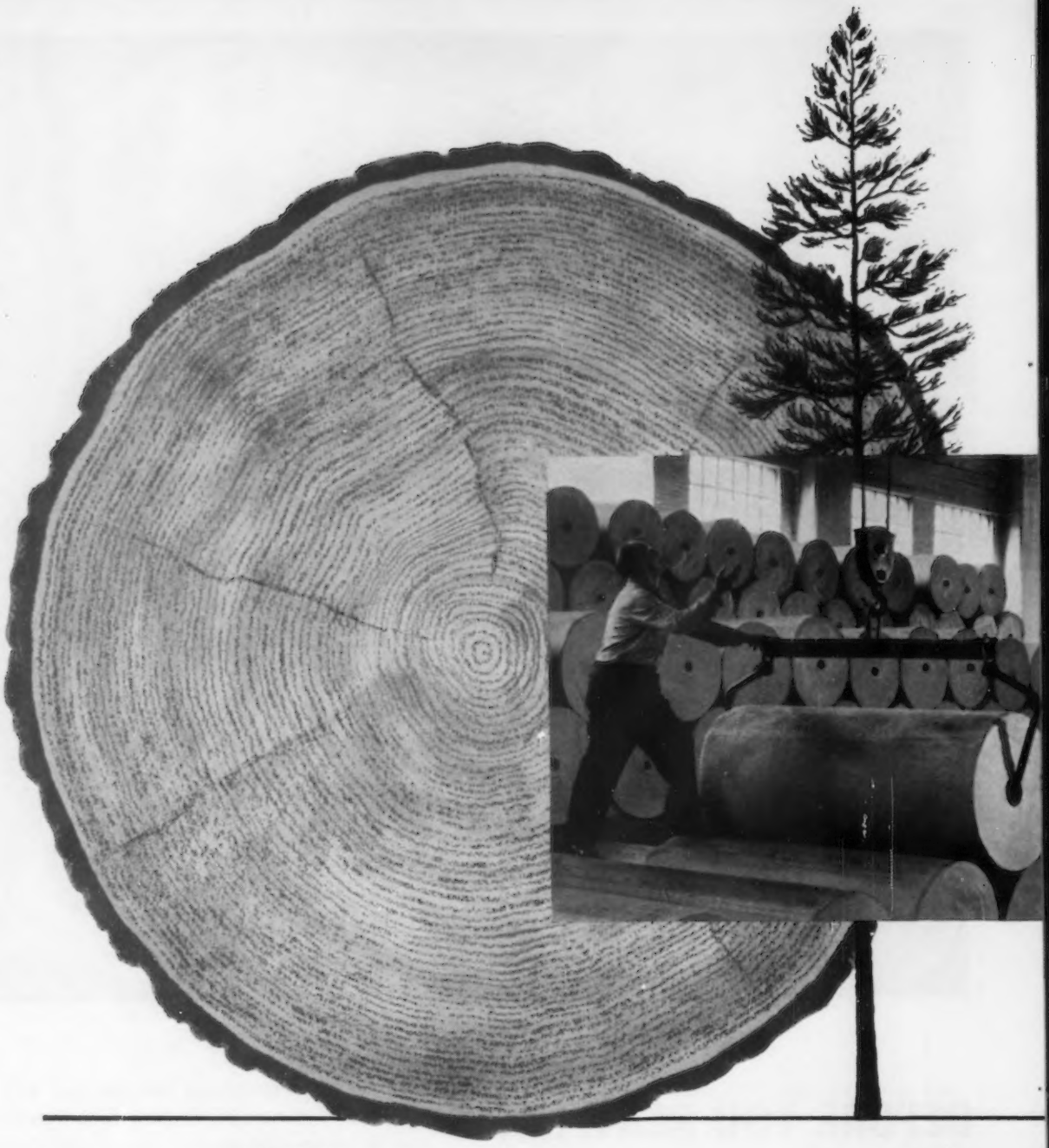
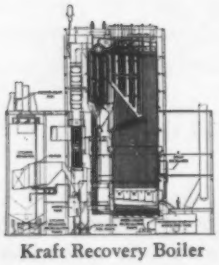
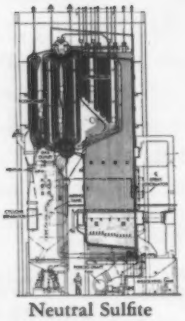
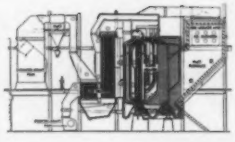




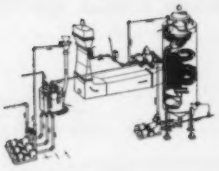
Kraft Recovery Boiler



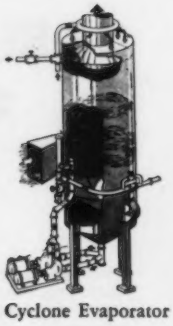
Neutral Sulfite
Recovery Boiler



Magnesium Bisulfite
Recovery Boiler



Venturi
Evaporator-Scrubber



Cyclone Evaporator

PROCESS

BABCOCK & WILCOX EQUIPMENT FOR THE PULP AND PAPER INDUSTRY

FOR CHEMICAL RECOVERY · PROCESS STEAM · POWER

Through constant research and engineering, B&W offers pulp and paper manufacturers equipment and systems adopting the latest operating practices and production advancements.

Recovery units for the Kraft process are now operating at higher pressures and temperatures to more economically meet the pulp and paper mills' expanding electric power requirements.

MgO recovery* is opening new areas of economical sulfite pulp production with recovery of both heat and chemical values from magnesium bisulfite waste liquors.

The recently introduced Magnefite pulping process* permits use of a wide variety of wood species and offers lower mill first-costs, and lower pulp production costs.

Power boilers operate at a wide range of steam pressures and temperatures for improved performance in generation of electricity, and for process steam.

These are some of the more recent developments in the complete range of B&W equipment and processes that are the result of B&W's close relationship with the industry and its needs. Call in the B&W man at your next stage of mill development planning. He'll talk B&W equipment in your language. The Babcock & Wilcox Company, Boiler Division, Barberton, Ohio.

**Exclusively available from The Babcock & Wilcox Company.*

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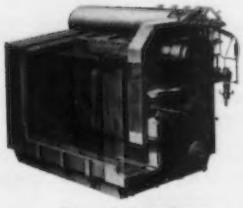
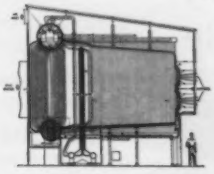
B&W THE BABCOCK & WILCOX COMPANY

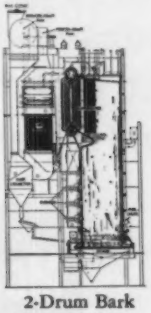
BOILER DIVISION



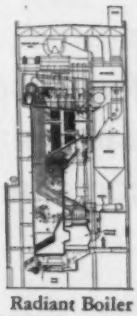
Type FM Package Power Boiler



PFI 400,000 lb hr Power Boiler



2-Drum Bark Burning Boiler



Radiant Boiler with Cyclone Furnace

POWER

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A new co-polymer latex–exempt from Food Additive Amendment for web coating food board used in throw-away paper cups, plates and other single service containers

- styrene copolymer–internally plasticized for greater processing efficiency.
- clear, glossy, non-yellowing coating–stays white during processing and after long storage periods
- grease-resistant; resistant to cold or hot boiling water
- products won't stick, even at high dispensing machine temperatures
- odorless and tasteless–no "paper odor" even after contact with hot water; no "paper taste" imparted to contents

For samples and complete product and regulation data on Lytron 6, write to Monsanto Chemical Company, Plastics Division, Room 731, Springfield 2, Massachusetts.

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MONSANTO DEVELOPER IN **PLASTICS**

MACHINE DESIGN COURTESY JOHN WALDRON CORP.

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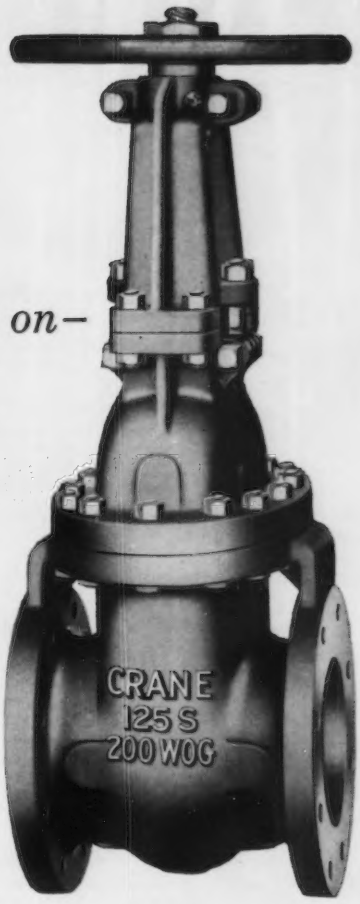

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125-pound iron body
gate, bronze trimmed.
Sizes 2" to 48".

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is economical, easy to apply...lengthens felt life

Because of its truly nonionic nature, Igepal CO-630 does not form insoluble precipitates with calcium and magnesium, as does soap, or anionic based detergents. This nonionic detergent is compatible with alkaline salts, acids and commonly used solvents, but contains no harmful alkalis to weaken felt.

Paper machine wet-end felts can be washed with Igepal CO-630 solutions in the usual felt conditioning units, either continuously or intermittently while running; there is a minimum of foaming action. Igepal improves drainage, is positively non-shrinking. Complete technical information supplied on request. Simply write—

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Igepal CO-630, manufactured by General Aniline & Film Corp., is sold outside the United States and Canada under the tradename Antarox CO-630 by distributors all over the world.

Trends

ANPA Wants More Excess Capacity —The Editor Indulges in Plain Talk

"North American newsprint producers should plan now to provide additional newsprint capacity to meet increasing requirements during this decade. This is forecast in a study 'Newsprint for 1970' by Dr. Louis T. Stevenson, made for American Newspaper Publishers Association.

"By 1965 total demand upon the North American newsprint manufacturers is expected to be 10,180,000 tons; of this 8,500,000 tons is for U. S. consumers; 580,000 tons for Canadian users; and 1,100,000 tons net North American export requirements.

"To meet these requirements, North American mills would require 11,300,000 tons of annual newsprint capacity, operating at 90% of capacity.

"By 1970 demand upon the North American newsprint mills is expected to reach 11,620,000 tons; 9,740,000 tons for U. S. consumers; 640,000 tons for Canadian users; and 1,240,000 tons to cover net North American export requirements.

"North American mills would need about 12,900,000 tons of annual newsprint capacity, operating at 90% of capacity, to meet demand."

The above which is verbatim from a press release by the American Newspaper Publishers Ass'n., indicates that ANPA has not changed its long term "party line" i.e. to persuade, encourage and demand that newsprint producers build a large excess capacity so as to maintain the depressed newsprint price. The U. S. Dept. of Commerce recently issued a report stating that there will be a world excess capacity in newsprint at least until 1965. The ANPA report indicates that present North American newsprint capacity is 10 million tons and that demand in 1965 will be 10.18 million tons. It is obvious to our readers that the deficit of 0.18 million or 180,000 tons will be taken care of by new machines now on order. The normal increases in machine efficiency and speed in five years will provide sufficiently more than excess capacity to take care of peak demand in 1965. The possible pattern or direction of advertising media demand in 1970 is not predictable and should not be made the basis at this time or in the next few years of plans for expansion or new mills.

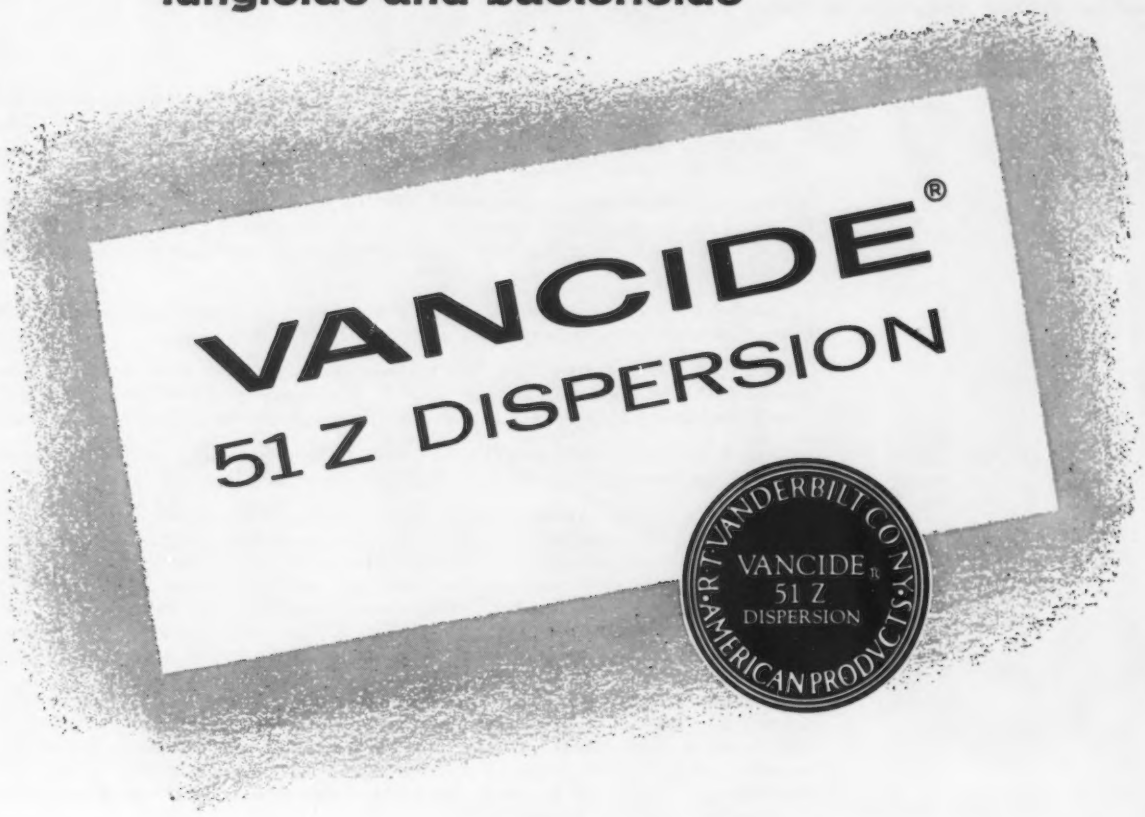
Present or potential newsprint manufacturers must not allow themselves to be stampeded into adding to the industry's over-capacity problems.

As our recent quarterly financial articles have shown we have a booming expanding industry which is making very little money. A good example of our over-capacity problems is the market pulp segment of our industry which has just had to resort to drastic price cuts in order to restore some semblance of order to a chaotic market. A study of the financial statements of the market pulp producers would hardly justify these price cuts on the basis of earnings. Without similar justification are some of the recent price cuts for a few grades of paper and board by companies big enough to know that the gain on this lasts only long enough for their competitors to cut their prices.

Many industry leaders in recent years have decried over-expansion of the industry with one breath and with the next announced a new machine or mill for their company.

WE ARE A BIG INDUSTRY! IT IS TIME WE STARTED ACTING LIKE ONE!

A powerful and effective fungicide and bactericide



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PAPER TRADE JOURNAL

WEEK OF DECEMBER 5, 1960

Two Weyerhaeuser Subsidiaries to Be Absorbed into Parent Organization

North Carolina Pulp Co. and Weyerhaeuser Southern Corp. will be liquidated as subsidiaries of Weyerhaeuser Co. on December 31, and absorbed into the operations of the parent organization.

The move will not affect personnel of the two companies according to an announcement from Weyerhaeuser headquarters in Tacoma, Wash.

North Carolina Pulp Co. at Plymouth is a leading local producer of pulp and paperboard. It also manages 540,000 acres of timberland in eastern North Carolina for maximum yield. The firm was acquired by Weyerhaeuser in 1957 as a result of the merger with Kieckhefer Container Co. and Eddy Paper Corp. It will continue operations as the North Carolina division of Weyerhaeuser's pulp and paperboard group.

Weyerhaeuser Southern Corp. was formed in 1959 following the purchase of Old Dominion Box Co.'s folding carton and shipping container plants at Charlotte, N. C. The folding carton plant will become a part of the Southern region of Weyerhaeuser's boxboard and folding carton division.

The Charlotte container plant will be a branch of the Southern region, shipping container division. It is expected to move in February to its new 144,000 sq. ft. manufacturing plant now under construction at Charlotte's Chemway Industrial Park.

Mead and St. Joe Enlarge Converting Facilities in Georgia

Two major developments in the conversion field in Atlanta, Ga., have been announced by St. Joe Paper Co., and Mead Corp. Packaging Division.

St. Joe announced plans to build a $2,500,000 corrugated box plant in College Park, on the outskirts of Atlanta, which will be the first manufacturing venture in Georgia for the company.

Mead will expand its Atlanta folding box facilities by 40 per cent. Output will include folding cartons for the soft drink industry as well as others, company officials said.

Roger L. Main, St. Joe president, made the announcement of his company's entry into the Georgia field. He said the College Park plant will contain between 120,000 and 150,000 square feet and completion has been scheduled for next year. The plant will use paperboard produced at the mill at Port St. Joe, Fla.

Jacksonville Firm Buys Epes-Fitzgerald

The Epes-Fitzgerald Paper Co., Richmond, Va., has been sold to the Jacksonville Paper Co. of Jacksonville, Fla., for an undisclosed price.

The sale, which is effective January 1, was announced by Tom R. McGehee, president of Jacksonville Paper and Travis H. Epes, Jr., president of Epes-Fitzgerald.

Epes-Fitzgerald currently operates divisions in Richmond, Norfolk Va., and Raleigh and Columbia, S.C. And last year it acquired the Frank G. Ennis Paper Co. in Norfolk.

The acquistion of Epes-Fitzgerald will give Jacksonville Paper 24 merchant houses servicing the entire Southeast.

With its supporting manufacturing and converting operations, Jacksonville will have total annual sales of about 60 million dollars.

Plans for Mississippi Mill Progressing

Thomas L. Murphy one of the owners of the Mississippi Pulp and Paper Co., has announced that negotiations with a large mid-western firm is progressing satisfactorily towards the location in Marion county of a pulp and paper mill.

The proposed plant would be located on a 250-acre site near Foxworth. Raw material would be drawn from local sources.

Mr. Murphy also stated that the mill would be a complete pulp and paper mill making kraft paper and perhaps paper cartons, and would use pine and some hardwood.

Lowe Paper Expands Special Coated Paper Operations

Lowe Paper Co. has expanded its facilities for producing high gloss clay coatings. The heart of this equipment consists of a calender built by the McKiernan-Terry Corp., Harrison, N. J. This calender is an open face machine, using chromium plated, internally heated steel rolls with alternating resilient backing rolls. The development of this novel process by Lowe was begun many years ago.

Clupak Adds Licensee In Japan

The Kokusaku Pulp Industry Co., Ltd., one of Japan's leading producers of papers, has had its license agreement with Clupak, Inc., validated by the Japanese government.

The unit for the production of Clupak extensible kraft paper will be constructed and installed by Mitsubishi Heavy Industries Reorganized, Ltd., with an American field engineer from Clupak, Inc., supervising the start-up and the training of the paper mill crews.

The extensible unit will be located in the Hokkaido kraft paper mill of Kokusaku. Mill officials plan to double the company's multiwall kraft production during 1961 with the addition of a high-speed Mitsubishi paper machine.

TWELVE TON REEL OF PULP made from West Coast wood at Rayonier's Jesup, Ga., plant using processes planned for the new Woodfibre, B. C., mill.

Rayonier Capital Investments at High Peak

Russell F. Erickson, president of Rayonier, Inc., said his company now has under way for completion during 1960-1961 a program of special capital investments involving expenditures of approximately $30,000,000.

Announcing that the company's newest mill at Woodfibre, British Columbia, Canada, would be in operation in May 1961, Mr. Erickson declared that this new mill with an annual capacity of 85,000 tons "illustrates the optimism with which Rayonier views the future of the pulp using industries."

The investment programs include the new kraft mill; conversion of the Grays Harbor, Wash., mill to a new two-stage sulphite pulping process; a sizeable investment in a new venture at Grays Harbor; a new chemical plant for making a modified cellulose at the Fernandina Beach, Fla., division; plus a number of other substantial new capital investments.

Across from the Waldorf-Astoria Hotel in New York Rayonier displayed a 12-ton jumbo roll of the new pulp aboard a flatbed truck. This was the first time that such a mammoth mill roll had ever been transported outside a pulp mill for public viewing.

The new pulp called "Fibrenier" began its tour of the nation's six leading papermaking regions in New York. The pulp, a kraft for papermaking, is a blend of three western Canadian trees; western hemlock, western red cedar and Douglas fir. Company technical personnel claim the new pulp, because of its blended fiber characteristics, offers the fine paper industry new sophisticated qualities of strength, formation, brightness and opacity.

HIGH SPEED HEADBOX REPRINTS AVAILABLE

A reprint containing the three articles on "New Developments in Paper Machine Headbox Design and Equipment" which recently appeared in this magazine is available at $1.00 for single copies, reduced price for quantities. Unauthorized reproduction of Paper Trade Journal articles, even for internal use only, is an infringement of our copyright.

10-Month Paperboard, Pulp Canadian Figures Top 1959

Canadian paperboard production dropped slightly in October 1960 when there was one less working day than in the same month of last year. Paperboard consumption and exports both showed increases from 1959.

Output amounted to 85,797 tons during the month, compared with 87,978 tons in October 1959. This brought the ten-month 1960 total to 819,749 tons, against 784,896 a year earlier. Included in the year-to-date figures were 466,592 tons of container grades (426,784 a year ago) and 353,157 tons of boxboard grades (358,112) a year ago.

Canadian consumption of paperboard for October rose slightly to 75,625 tons from 74,547 tons a year earlier. For the January-October period, consumption totaled 730,878 tons and 722,219 tons, respectively.

Paperboard exports have been sharply higher in 1960. They amounted to 9,995 tons in October 1960, compared with 9,379 tons in October 1959; and for the first 10 months totaled 86,155 tons, against 58,254 tons in 1959.

WOOD PULP

Owing in part to one less working day in October, the production, consumption and exports of wood pulp during the month were all slightly lower than a year ago. For the first 10 months of the year, however, they were considerably ahead of 1959.

Production for the month totaled 985,545 tons, marginally under the 987,202 tons reported in October 1959. This brought the ten-month 1960 total to 9,302,015 tons, as against 8,822,698 tons in 1959.

Pulp consumption in Canada during October was 755,393 tons, compared with 757,324 tons a year earlier. For the first 10 months of the year, consumption at 7,133,935 tons showed a gain from the 6,777,983 in the same period of 1959.

October pulp exports were 221,381 tons, as compared with 230,032 tons in October 1959. The 10-month export aggregate was 2,151,806 tons this year, up from 2,034,495 tons last year.

Paper and Paperboard Production

The American Paper and Pulp Association reported the ratio of the United States paper production to mill capacity for the week ending November 19, 1960, at 89.1 per cent, compared with 96.8 per cent, revised, for the preceding week. The ratio was 96.3 per cent for the corresponding week a year ago.

The National Paperboard Association reported the paperboard production ratio for the week ending November 19, 1960, at 89 per cent, compared with 92 per cent for the preceding week and 95 per cent for the corresponding week a year ago.

(Detailed Statistics on page 57)

can be recovered from the waste water and returned to the machine chest to be turned into profitable production – at lowest net cost per ton via the

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PAPER PEOPLE

J. C. Scarth

J. C. Mulholland

Scarth Promoted at KVP Sutherland

John C. Scarth has been appointed assistant to the president of KVP Sutherland Paper Co.

Mr. Scarth was formerly vice president and sales manager of The KVP Co., Ltd., an associated company of KVP Sutherland in Espanola, Ontario. Mr. Scarth is now headquartered in the sales offices of The KVP Co., Ltd., in Toronto, Ontario. In his new capacity, he will be active in sales matters in the United States as well as Canada. His office will be located in the KVP Division's main office building.

Mr. Scarth started with The KVP Co. in 1948 as a pulpmill chemist. He is a graduate of the University of Bishop's College, Lennoxville, Quebec. He was appointed sales manager of The KVP Co., Ltd., in 1955 and vice president and sales manager in 1958.

Penhaker Steps Up At H&W Eastern Sales Div.

Scott Paper Co. has announced the promotion of John J. Penhaker to manager of converter paper sales for its Hollingsworth & Whitney Eastern Sales Division.

Mr. Penhaker has had 41 years of experience in the specialty paper field. He began his career with the Hollingsworth & Whitney Co. as an office boy in 1919. Since that time, he has progressed through increasingly responsible positions including manager of merchant accounts.

PCA Names Mulholland V-P Paperboard Sales

J. C. Mulholland, a 25-year veteran of the paper and paperboard industries, has been appointed vice president of sales—paperboard division, of Packaging Corp. of America, according to an announcement by J. C. Morris, senior vice president—paperboard division.

Mr. Mulholland will start his new assignment on January 1. His office will be located at the Evanston, Ill., headquarters of the company. He has previously been manager of paper sales at Crossett Paper Mills.

Simpson Paper Names West Coast Sales Promotion Mgr.

Appointment of James F. Brinkley, Jr., as West Coast manager of sales promotion for Simpson Paper Co. Division of Simpson Lee Paper Co. has been announced.

Mr. Brinkley, who has been with Simpson Paper since 1952, will maintain his headquarters in Los Angeles. He will work closely with W. R. Denman, West Coast sales manager of Simpson Paper in San Francisco and Barry G. Whitaker, advertising manager of The Simpson Lee Paper Co.

Prior to his present appointment, Mr. Brinkley was sales representative for printing sales for two years in Los Angeles. He started with Simpson in plant engineering in Everett, Wash., and in 1954 became a sales representative for converting sales, a position he held until 1958.

Weyerhaeuser Elects Crosby a Director

George C. Crosby of Minneapolis, Minn., a member of the board of directors of Weyerhaeuser Co., has been elected a member of the board's executive committee.

The new executive committee member is chairman of the board of the S. T. McKnight Co., a Minneapolis investment firm. He is a director of the First National Bank of Minneapolis and Farmers and Mechanics Savings Bank. He is active in the business and community life of Minneapolis.

Mr. Crosby is an addition to the Weyerhaeuser board's executive committee, which now consists of Edmund Hayes, chairman, Norton Clapp, Chas. H. Ingram, John M. Musser, F. K. Weyerhaeuser, and Mr. Crosby.

Buncke to Retire From Oxford Paper

Harry J. Buncke, vice president, engineering, Oxford Paper Co., will retire on pension on December 1 after 27 years with Oxford.

Born in Whitestone, Long Island, N. Y., he graduated from Columbia University in 1915 with a degree in civil engineering and then took graduate work at the University of Maine leading to an M.S. degree in pulp and paper technology.

In 1916 he joined the Abitibi Power & Paper Co., Ltd., Iroquois Falls, Ontario, as assistant to the master mechanic, then the groundwood and wood handling superintendent. In 1917-1918 he served as a First Lieutenant in the Engineering Corps of the United States Army. He then returned to Abitibi as technical assistant to the mill manager. In 1922 he was promoted to chief engineer of Abitibi at Iroquois Falls.

In 1933 he joined Oxford Paper, Rumford, as chief engineer and in 1936 was promoted to chief engineer and assistant mill manager. In 1953 he was promoted to vice president, engineering, and in 1959 was transferred from Rumford to Oxford's executive offices in New York City.

CWPP Advances Orcutt At Wisconsin Rapids

William P. Orcutt has been appointed technical supervisor at the Wisconsin Rapids Division of Consolidated Water Power & Paper Co.

Mr. Orcutt has been serving as a project engineer on the company's

research and development staff since 1957. He joined the company in 1956 as Wisconsin River Division chemist following graduation that year from New York State College of Forestry where he received a B.S. degree in pulp and paper chemistry. He succeeds Jack Chinn who recently resigned.

C. S. Reynolds

Reynolds Named President Of Thurso Pulp and Paper

Clyde S. Reynolds has been elected president of Thurso Pulp and Paper Co. succeeding Paul B. Bourget who recently became president of the Quebec Forest Industries Ass'n.

After serving in various executive capacities with the Singer Organization, Mr. Reynolds was transferred to Thurso where he has been serving in the capacity of vice president and general manager since 1958.

Jack Gilman

Gilman Named V-P, Manufacturing Allied

Appointment of Jack Gilman as vice president in charge of manufacturing for the Allied Paper Corp. has been announced. Mr. Gilman will direct and co-ordinate all manufacturing functions of the King, Bryant Book, Bryant Coating, King Photographic and Monarch Mill Divisions in Kalamazoo. He will also be responsible for the activities of the Engineering and Production Scheduling Departments.

An employee of the Allied Paper Corp. since 1939, he has served as a corporate officer and as a member of Allied's Executive Staff since 1953.

Hendry Dies In Retirement

Thomas A. Hendry, Sr., former general sales manager of the Abitibi Power & Paper Co. and the Mead Sales Co., died recently while in retirement at Boynton Beach, Fla.

In 1919, Mr. Hendry began his career in the paper industry first with Dill & Collins of Philadelphia and then with the McLaurin-Jones Paper Co. He was associated with the Mead Sales Co. from 1923 until 1930 when he left to become general sales manager for Fraser Paper Co., Ltd., where he remained until he rejoined Mead in 1936.

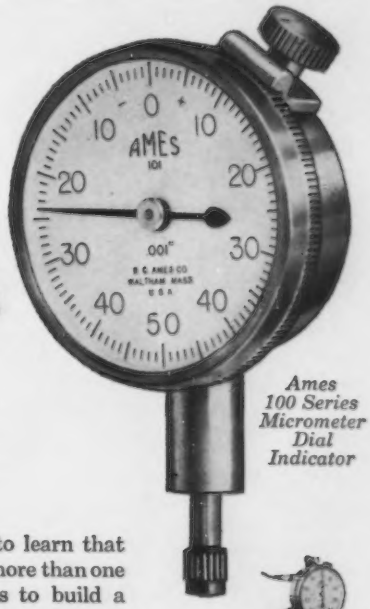
In 1947, he joined Abitibi as general sales manager until his retirement in 1952. After his retirement he lived in Toronto for several years until moving to Florida.

Nelson Named To Bowater Post

Richard E. Nelson of Rock Hill has been named technical superintendent of Bowater Board Co., Catawba, S.C.

Prior to joining Bowater Board Co., Mr. Nelson was employed for the past six years as a senior research chemist with the American Marietta Co. in Seattle, Wash. He was associated with the Coos Bay Lumber Co. in Coos Bay, Ore., from 1950 to 1954.

AMES DIAL INDICATORS are built by nonconformists



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Some people might be shocked to learn that in this day of automation it takes more than one hundred separate hand operations to build a single Ames micrometer. In many respects we are building and assembling these precision instruments exactly as we did fifty years ago.

Why? Because there are some jobs that can still be done *better* by a pair of skillful, sensitive hands than by the best automated machinery made. As long as this fact holds true we'll refuse — for *your* sake — to follow the crowd. For Catalog No. 60 write to: B. C. Ames Co., 55 Ames St., Waltham 54, Mass. — in Canada, H. C. Burton Co., 166 Rebecca Street, Hamilton.

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PJT NEWS OF CONVERTERS

New Haven Board & Carton Ups Donovan

Thomas M. Donovan, assistant treasurer, has been appointed corporate controller of The New Haven Board & Carton Co.

This appointment gives Mr. Donovan the responsibility for operational controls for the entire company. New Haven Board & Carton has paperboard mills and carton manufacturing facilities at New Haven, Conn.; the Bartgis Division, Ilchester, Md.; and a corrugated plant, the Fitzhugh Corrugated Division, Lakeview, Long Island, N. Y.

New Packaging Group Formed

A new trade association has been organized at a meeting by representatives of several leading shippers, container manufacturers, packaging specialists, and transportation interests. The name selected for the new association is Bulk Packaging and Containerization Institute.

This organization will deal primarily with new concepts in shipping containers and practices. When package freight is shipped inside of large cargo containers for rapid handling, loading and unloading, the hazards in transit are greatly reduced compared with traditional carloads or truck loads. Potential cost reductions in packaging, it was stated, could serve as an extra incentive to shippers for the use of modern "containerization," available by the use of large containers made of steel, aluminum, plywood, fiberboard or plastic combinations. Although containerization is not new, several new developments have attracted favorable attention recently. The Institute will serve as a clearing house for information and will aid in establishing acceptable specifications.

Fred Muller, Jr., a transportation specialist for Arthur D. Little, Inc., acted as temporary chairman of the organizing meeting. Others on the committee were Glenn Mather, experienced in packaging association management; J. P. O'Hanlon, manager of packaging, Radio Corp. of America; Frank W. Green, packaging consultant, East Longmeadow, Mass.; and Charles J. Zusi, packaging consultant, Evanston, Ill.

Mr. Green has been named chairman of the Potential Packaging Cost Reduction Committee, and Mr. Mather is managing director.

Officers will be elected and preliminary plans will be discussed at an open meeting on January 19 at the Statler-Hilton Hotel, New York.

Schonberg Joins Tri-Wall Containers

Joseph Schonberg has been appointed manufacturing manager of Tri-Wall Containers, Inc., New York. In the post, Mr. Schonberg will have overall responsibility for all plant operations.

Before joining Tri-Wall, he served for eight years as general manager of the Eastern division of Chippewa Paper Products Co., Hackensack, N.J., and for several years was production engineer in various plants of the Hudson Pulp & Paper Corp.

Tri-Wall Containers, Inc., whose major plant is at Wassaic, N.Y., is a developer and fabricator of triple-wall corrugated board and corrugated board products.

Abramson to Head Central States

Elmer D. Abramson has been elected president of Central States Paper and Bag Co. by the board of directors which met following the company's annual stockholders meeting in St. Louis. Mr. Abramson was formerly executive vice president. Other corporate appointments were Alvin A. Abramson as treasurer, and David J. McKay, Jr., as secretary. Newly elected to the board of directors were Herbert Frank, Paul Berwald and Harold C. Hanke.

Central States Paper and Bag Co. has plants in St. Louis, Mo.; Palatka, Fla.; and Salt Lake City, Utah.

Mead Plans Increased Facilities at Atlanta

The Mead Corp. has revealed plans for a 40 per cent increase in facilities at the Atlanta plant of the Mead Packaging Division. Contracts for the multi-million dollar building project are expected to be awarded in December and construction will begin immediately thereafter.

The 218,000 square foot addition will adjoin Mead Packaging's two production plants at 950 Marietta Street, N. W., occupying the former 14-acre Bellwood Railroad yards recently purchased by Mead from the Atlanta Coast Line Railroad Co.

W. FRED DOLKE, A.I.A., ARCHITECT & ENGINEER

NEW RESEARCH AND DEVELOPMENT CENTER, two miles from the main plant of Beloit Iron Works, at Beloit, Wisconsin, will provide 45,000 square feet of modern plant and facilities for "paperesearch." Now under construction, the Center will be completed early in the second quarter of 1961. More efficient machines, better paper, new economies—these are key items in Beloit's continuing research and development program.

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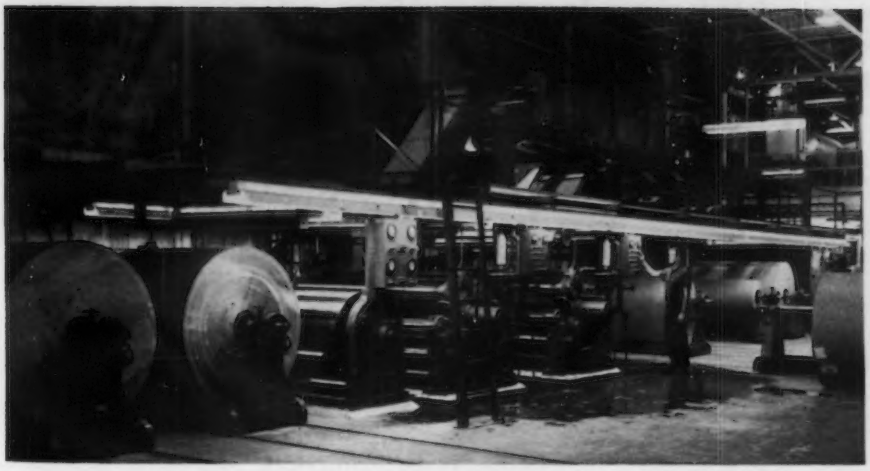


NEW HOOPER-SWIFT CORRUGATOR at Golden, Colo., plant of Boise Cascade Container Corp. which has just gone into production.

Boise Cascade Container Opens New Denver Area Plant

Production capacity for corrugated shipping containers in the Denver area has been more than doubled with the opening of a new plant near there by Boise Cascade Container Corp., a wholly owned subsidiary of Boise Cascade Corp. The new plant, which covers 90,000 square feet, has just gone into operation. It has the initial capacity to make 30,000,0000 square feet of corrugated board per month and convert it into boxes.

The Golden plant is the third of its kind in Boise Cascade Container Corp.'s chain, plants previously having been put into operation at Wallula, Wash., and Burley, Ida. A fourth plant at present is being equipped at Sunnyvale, Calif.

MOST MODERN PLANT

The Golden plant is among the most modern of its kind in the nation and is equipped with the latest developments in production machinery.

The basic machinery for the plant is of Hooper-Swift design, built by the Metal Products Division of Koppers Co., Inc.

This includes an 87-inch corrugator which can produce up to 600 lineal feet of corrugated paper per minute; two Hooper-Swift printer-slotters which print designs and identification on the boxes in two colors; and a Glu-Lok folder-gluer which prints in one color and also folds and glues the containers.

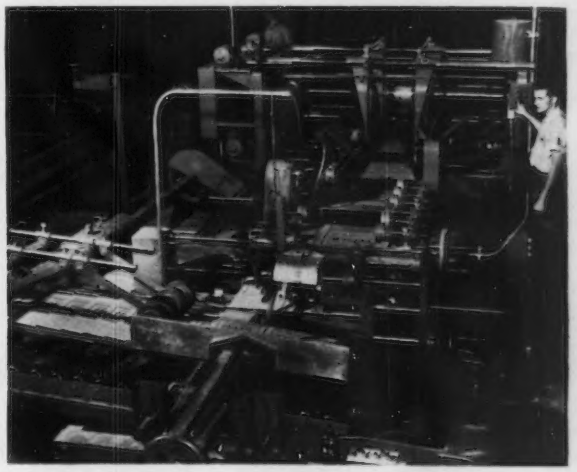
The plant itself is of tilt-up reinforced concrete slab construction, designed for utmost efficiency in production. It is located on a 30-acre tract purchased by Boise Cascade, which provides ample room for future expansion if desired. Approximately 95 per cent of the plant is devoted to production and storage facilities while five per cent is modern, air-conditioned office space.

UNIQUE STEAM SYSTEM

The new Boise Cascade plant has a unique system to furnish steam used in the corrugating process. This embodies the use of two Clayton steam generators and application of the steam to the machine through special processes worked out by Boise Cascade engineers in cooperation with the Portland, Ore., firm of A. W. Mortensen Co.

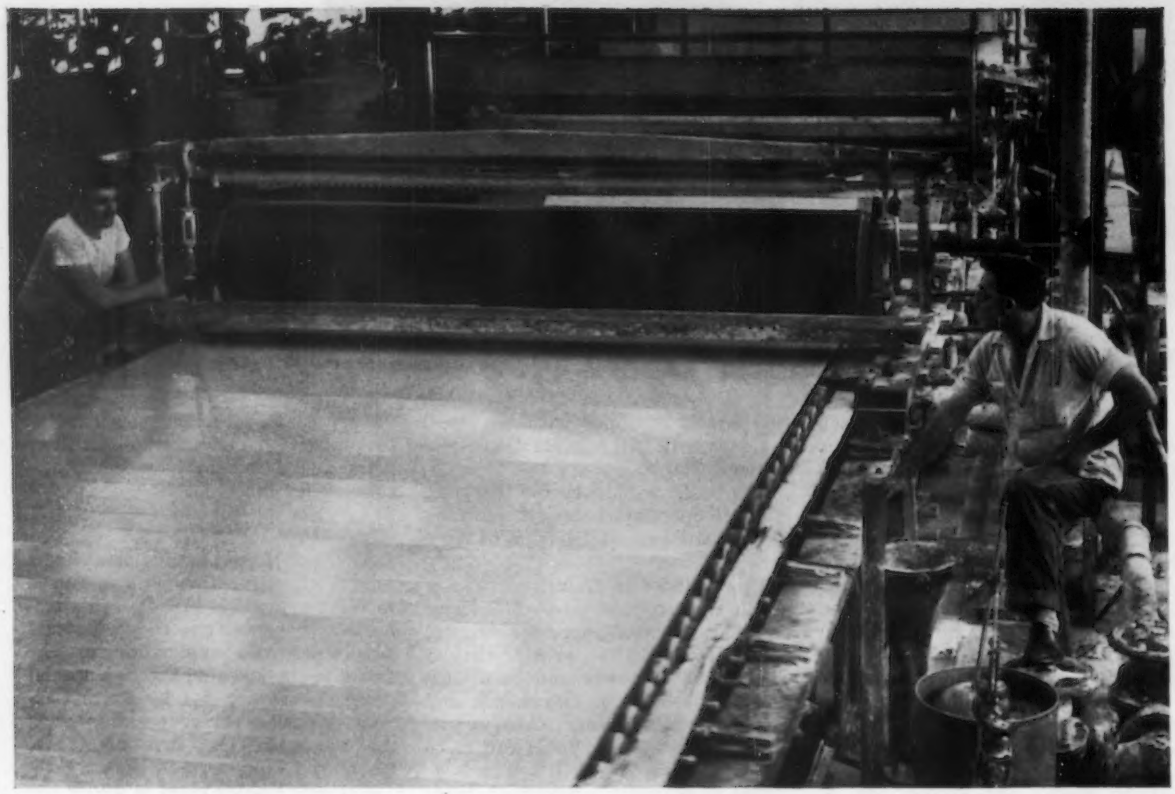
The new Golden plant is under the general direction of Gordon C. Randall, Boise Cascade Container Corp.'s general manager of the Rocky Mountain Region, with John Stover as plant superintendent, and Bill Bridenbaugh as sales manager.

TWO HOOPER-SWIFT PRINTER-SLOTTERS print designs and identification in two colors on 15,000 corrugated boxes per hour.



PRODUCTION END OF FOLDER-GLUER installed in Boise Cascade Container Corporation's new Golden plant by Koppers Co., Inc.

Papermakers Throughout the Northeast Look to TYER for Rubber Covered Rolls

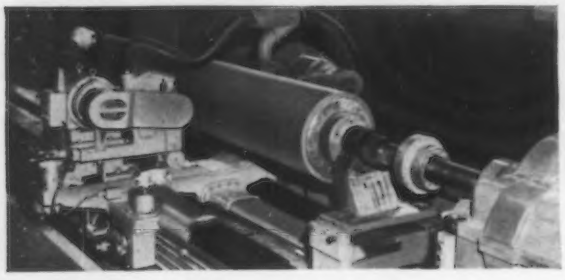


Research plus service makes the difference

More and more papermakers throughout the Northeast are finding that it pays to do business with Tyer.

With facilities to handle the industry's largest rolls, this hundred-year-old company is building an enviable reputation for service.

Newly developed Tyer roll compounds such as Tyerock and Tyerstone super-hard press rolls, Tyershed table rolls, and special roll formulas for use where rolls are subject to attack by chemicals and high temperatures are a result of Tyer's intensive research and developments.



If you are a papermaker in the Northeast, don't overlook the many advantages that Tyer offers you in the way of extra quality and service.

Your Tyer Sales Engineer is ready to help you with Rubber covered roll problems of any description. Be sure to call him.

TYER

Tyer Rubber Company, Andover, Mass.

WISCONSIN WIRE WORKS · APPLETON, WISCONSIN

How Du Pont brighter pulp...save

Mechanical pulp bleaching...

A combination of peroxides can save up to $1.25 a ton over a hydrogen peroxide treatment.

Over 95% of all groundwood bleacheries have found that a combination of hydrogen and sodium peroxides cuts bleaching costs up to $1.25 a ton. The reason—combination formulas eliminate the use of caustic soda.

How is this possible? Because of the bleaching chemistry involved. When hydrogen peroxide is used alone, substantial quantities of caustic soda must be added to assure effective bleaching. But when sodium peroxide is part of the formula, caustic soda is formed and additional quantities aren't needed. When caustic limits of this solution are reached, hydrogen peroxide is added to complete the balance and the bleaching formula is now ready to use.

The charts below show the savings possible in a one-stage tower bleaching process when a combination of peroxides is used instead of a single hydrogen peroxide: For normal brightness, the saving runs from $.90 to $1.00 a ton; for premium brightness, $1.15 to $1.25 a ton.

You can obtain cold soda pulp and groundwood pulp brightness as high as 75 by this method. Cold soda pulp can be bleached in the refiner in absence of a bleaching tower with brightness gains up to 20 points.

For further information, get in touch with your Du Pont Representative listed at right.

EXAMPLE #1

ONE-STAGE TOWER PROCESS FOR NORMAL BRIGHTNESS

A. Using combination of peroxides

5.0% silicate
1.2% "Solozone" sodium peroxide
0.7% "Albone" 50 hydrogen peroxide

B. Using one peroxide only

5.0% silicate
1.2% NaOH
1.7% "Albone" 50 hydrogen peroxide

SAVINGS OF $.90 TO $1.00 PER TON BY USING COMBINATION OF PEROXIDES

EXAMPLE #2

ONE-STAGE TOWER PROCESS FOR PREMIUM BRIGHTNESS

A. Using combination of peroxides

5.0% silicate
1.5% "Solozone" sodium peroxide
1.25% "Albone" 50 hydrogen peroxide

B. Using one peroxide only

5.0% silicate
1.5% NaOH
2.5% "Albone" 50 hydrogen peroxide

SAVINGS OF $1.15 TO $1.25 PER TON BY USING COMBINATION OF PEROXIDES

Peroxides give you you up to $1.25 a ton!

Chemical pulp bleaching...

Peroxides—alone or in combination —give brightness up to 92 with excellent stability.

Mills throughout the country are finding that peroxides, alone or in combination, can give chemical pulp high brightness stability—without significant decrease in pulp strength or yield.

IN KRAFT BLEACHING, a five-stage process is producing outstanding results for a number of mills, among them a southern papermaker now producing over 100,000 tons of high brightness pulp annually. This process combines the best advantages of three bleaching agents—hypochlorite, chlorine dioxide and peroxide—to give brightnesses up to 90 with excellent brightness stability.

IN SULFITE BLEACHING, three peroxide processes are proving successful—a single-stage peroxide process which brightens pulp up to 75; a two-stage hypochlorite-peroxide process which brightens up to 86; a four-stage chlorine-caustic-hypochlorite-peroxide process which brightens up to 92. For information, call your Du Pont Representative listed below.

TECHNICAL SERVICE FOR YOU . . . Peroxides have a powerful bleaching action that produces high brightness pulp with excellent brightness stability. But it takes skill and experience to use peroxides efficiently. With Du Pont "Albone" hydrogen peroxide and "Solozone" sodium peroxide, you get the most authoritative advice and service available . . . from the manufacturer of *both* products.

Du Pont specialists can give you practical bleaching formulas for groundwood, cold soda, kraft and sulfite. They'll help you set up your bleaching operation, train operators, and check frequently to make sure your bleaching quality stays high and costs stay low.

Call your Du Pont representative listed below; he'll be glad to start a program to help you determine the advantages of Du Pont peroxides in your mill. Or write: Du Pont, Electrochemicals Department, Peroxygen Products Division, Wilmington 98, Delaware.

MIDWEST AREA
W. L. Liike, Chicago, Ill. • INdependence 3-7250

WEST COAST AREA
P. E. Kiefer, Portland, Oregon • CApitol 7-1281

NEW YORK & BOSTON AREA
C. R. Lombard, NewYork, N.Y. • LOngacre 3-6440

SOUTHERN AREA
R.W. Hammond, Charlotte, N.C. • FRanklin 5-5561

Or call: N. J. Stalter, Wilmington, Del. • PRospect 4-4698

DU PONT PEROXIDES

ALBONE® hydrogen peroxide

DU PONT REG. U. S. PAT. OFF.

SOLOZONE® sodium peroxide

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

MAINTENANCE SERIES
NUMBER 31

Proper Chipper Knife Care Can Reduce Costs and Produce Better Chips

Principal factors in care of chipper knives are: attention to the setting of them in the knife pockets; rotation of a larger number of knives; and proper grinding procedures.

George Bevis,
Supt. Knife Dept.,
The Ohio Knife Co.

Regardless of how well a chipper knife is manufactured, if poor grinding practices are prevalent the full value of the knife will not be realized. In fact, the higher the quality the knife, the easier it is to reduce its performance by poor grinding.

What are the requirements of a good chipper knife? Simply, the answer is that a chipper knife must be manufactured to do the best possible job, and yet cut costs for the pulp mill. But chipper knives cannot be standardized; they must be tailor-made for each specific mill. These factors combine, then, to present one of the toughest problems faced by a knife manufacturer.

A chipper knife, to give the best performance ,should have been heat-treated by its manufacturer so that it will not chip or spall when cutting wood chips. Knives that chip or spall will lose too much life in grinding and will create excessive sawdust and strings. Buying the best possible high-grade steel knives pays dividends in another manner. There will be less downtime for knife changing, since the knives will require fewer grindings.

What are some of the inroads to reducing the maintenance costs of chipper knives? Barking and using plenty of water are two important factors. Pulpwood that has been rossed to as near as possible to 100 per cent removal of bark will contain much less foreign material, such as sand, rocks, and nails, to nick or dull knives. After debarking it is essential to use plenty of water on the pulpwood, particularly to wash off dirt, sand, and grit. This can be accomplished with a 2½ to 3 inch diameter line spraying water over the logs as they are conveyed to the chipper. Sand is, of course, one of the greatest hazards, as it dulls chipper knives quickly.

A good scheme is the installation of an electronic device on the conveyor to pick out metal in or on the logs. When a log with metal in it passes through this device, the conveyor is stopped automatically and the log is ejected before it enters the chipper.

Clean Knife Pockets

Another way to cut costs is to be sure, above all, that the knife seats on the chipper are not worn. This is one of the principal causes of broken knives, irregular chips, and excessive sawdust. Setting of the knives in the knife pockets should be done with great care. There should be absolute certainty that the knife pockets, or seats, are cleaned of all wood, sawdust, and any foreign material before the knives are seated. All knives must project to exactly the same distance from the disk face. The knives should balance as nearly as possible to minimize vibration.

The anvil plays a very important role in the life of chipper knives. It should be composed of high-grade tool steel and heat treated to minimize dulling or the development of a round cutting edge. When the anvil has become dull it is much more difficult for the chipper knife to cut cleanly through the wood. This condition many times results in spalling of the knife. It also results in poor quality chips because of the mashing effect that occurs between the knife and the anvil. The anvil should be set from .010 to .030 from the chipper knives on the disk, depending upon the condition of the machine, the type of anvil used, and the angle of the feeder spout in relation to the chipper disk. Anvils that are set too far from the knives dull knives quickly and cause a large percentage of sawdust.

The faces on the wearing plates of the chipper disk should be made of high quality wear-resisting tool steel, hardened to a depth of 3/16 to ¼ inch.

This type of face plate can be reground several times before it has to be discarded. Standard size shims can be placed behind the plates to set them out to their original position. These plates will last two or three times longer for each setting

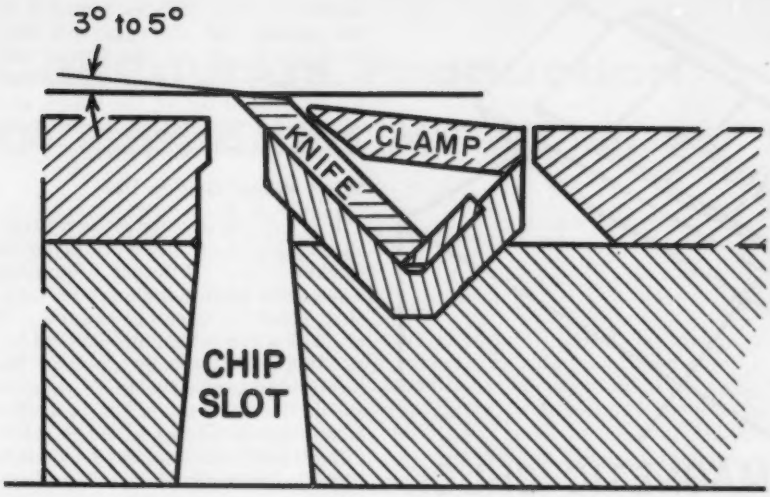


FIGURE 1. THROUGH THE DISK MOUNTED TYPE OF KNIFE. Note a three to five degree clearance should be allowed at the heel of the bevel.

than the old-fashioned soft steel or semi-hard steel ones. Plates that are hardened all through their depths cannot withstand the shock of chipping and will break or crack. Most solid steel plates used on chippers today are not made of very good quality steel and are not hard enough to give long life. These plates must be machined very accurately to assure the chipper disk's running true. Otherwise, irregular chips will be produced which will totally reduce the quality and quantity of chips cut.

Too Little Rotation

Almost every mill rotates too few knives. Knife costs would be cut if a larger number of knives were rotated. Grinder operators could select the various nicked knives in the set on the chipper and then grind them according to the depth of the nicks. Great savings could be effected if every grinder operator were schooled to use this method, and to grind off no more metal than is necessary to sharpen the knives. It has been proven by this method that it is possible to obtain eight per cent more life out of chipper knives, at the same time to cut chips of better quality.

When sharpening chipper knives, bevels should be ground straight rather than ground hollow. The length of bevel is determined by the way the knife mounting is in or on the chipper disk. The purpose of this bevel is strictly to keep the knife from spalling out to any great excess when striking foreign material.

In determining the length of the bevel on the knives shown in Figure 1 on a through-the-disk mounted type, a three to five degree clearance should be allowed at the heel of the bevel. The long bevel is determined by the angle of the feeder spout, as shown in Figure 2. The spout angle, shown in relation to the angle of the knife, should be eight to ten degrees longer.

Bevels that are too long will cause the chipper to hog the wood and cut irregular chips. They will also weaken the cutting edge of the knife and cause excessive spalling. Bevels that are too short increase power consumed by the chipper, cut poor quality chips, and create more sawdust. The wood tends to bounce away from knives with short, blunt bevels rather than to be pulled in against the chipper disk.

How to Grind

The grinding machine should be a heavy-duty type, equipped with a magnetic chuck to hold the knives while they are being ground. The table, or grinding head, should reciprocate at 70 to 100 f. p. m. and it should be equipped with a power feed on the grinding wheel head. Do not hand feed the wheel, as this tends to burn the knives. A grinding machine that travels too slowly will grind in one position too long and generate heat. This will also burn the knives or draw the temper. The grinding wheel speed should be between 3800 to 4500 surface feet per minute to give fast, cool grinding. A surface speed that exceeds this amount will polish and burn the steel very quickly, and will not permit the grinding wheel an opportunity to cut and remove the metal as fast as the grinding machine is traveling.

While grinding, plenty of clean coolant should be flooded over the knives. Every knife should be ground with the cutting edge up. This action tends to conduct the heat generated by the grinding to the heel of the bevel and away from the knife edge. Under no conditions should the cutting edge be inverted, as this conducts the grinding heat to the cutting edge and draws the temper of the knife. Furthermore, when grinding knives in this position, the coolant cannot be applied to the proper place on the cutting edge.

Knives should be set on the beveling chuck or knife bar with the bevels up, extending no more than ¼ to ⅜ inches above the top of the

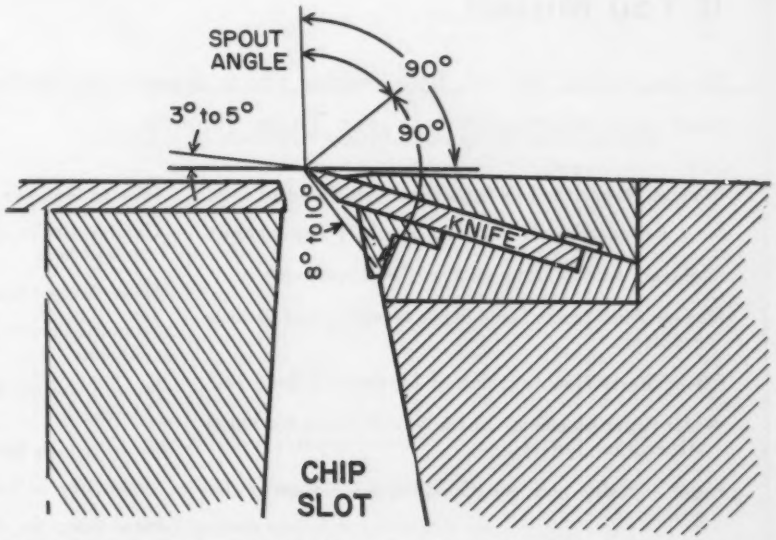


FIGURE 2. FACE MOUNTED KNIFE. The spout angle relative to the angle of the knife should be eight to ten degrees longer.

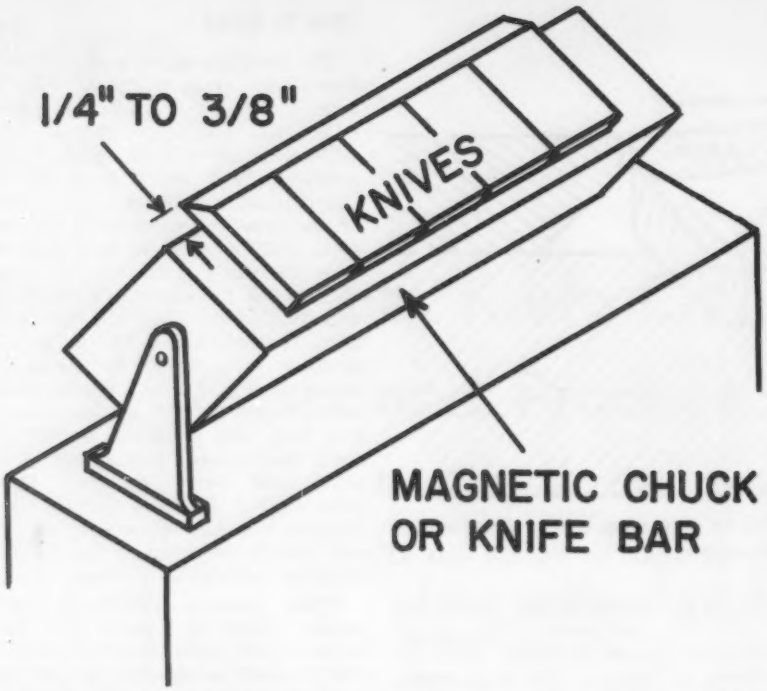


FIGURE 3. PROPER SETTING OF CHIPPER KNIVES on a magnetic chuck or knife bar i.e. with the bevels protruding no more than ¼ to ⅜ inches from the edge.

chuck. Figure 3, shows the proper setting of knives on the knife bar, or chuck. This will contain a pool of water at the cutting edge, which will flow over the cutting edge and not around the ends of the knife. Knives that are set over this recommended distance from the top of the chuck will not have coolant at the extreme cutting edge. This will result in rapid heating of the knife edge and draw its temper softer than what is desired.

A bevel that has become a light straw color from grinding will have a cutting edge softened two or three points (Rockwell hardness) and the knives will last only about half the normal cutting time in the chipper. A cutting edge that has been burned brown or blue will be damaged to the extent that the edge will turn over, spall out, or the knives will crack. Many times such cracks cannot be ground out of the knives and will have a tendency to deepen with each new grinding.

What Wheel Grit to Use

It is difficult to recommend a grade of abrasive to use, as every grinding machine has different diameter wheels and their spindle speeds vary. Most grinding machines can use a G or an H grade wheel, or segment, of 46 to 60 grit. Generally, the finer the grit the better is the knife's finish, and it has been found that a better finish extends knife life. When using a finer grit it is necessary to use a slightly softer wheel. It always pays to use a premium grade grit in grinding wheels or segments, just as in the long run it pays to purchase the best quality knives available. By using the proper grinding equipment and abrasive the total time required to grind chipper knives can be reduced by 25 to 30 per cent.

Since chipper knives are custom-made for each specific installation, the maintenance practices mentioned above can, necessarily, only be generalized. In most instances, however, the greater reductions in maintenance and knife costs can probably be realized when the user consults the knife manufacturer, who usually maintains a service staff that is willing and eager to make recommendations tailored to the user's own knives, grinding equipment, and procedures.

If You Missed . . .

If you missed any of these articles which appeared in our November issues, you should have your own subscription to PAPER TRADE JOURNAL.

Progress Report on Mill Experience with Needled Felts.

New Avisco Fiber Is Boon To Specialty Papermakers.

Engineers Reveal Data on New Developments.

Narrow Aisle Trucks Solve Paper Handling and Storage Problems.

Fraser Starts New Machine at Madawaska Bond Mill.

Wider Paper Machines Create New Problems for Vapor Absorption Systems.

Paper Industry and Air Conditioning Pioneered Together.

Some New Developments in Synthetic Fiber Paper.

How to Get and Keep Good Doctoring.

Celotex Starts Up World's Most Automated Fiberboard Mill.

Swiss Paper Museum Opens New Department.

Proper Calender Roll Maintenance Is Essential to Paper Quality.

How to Use the Stowe Woodward Nip and Crown Test Method.

Scott Reveals Details of Mobile Tissue Operation.

Slight Drop in Sales—Big Drop in Earnings.

How Gaspesia Achieved Tops in Bleached Sulphite Pulp Production.

Continuous Production Of Bleached NSSC Pulp

R. P. Green,
Champion Paper and Fibre Co.,
Hamilton, Ohio

The advantages of continuous pulping were briefly discussed, particularly in regard to savings in capital and operating costs. It has been estimated that in a 200-ton per day mill, savings of approximately $150,000 can be expected in building costs and auxiliary equipment, the cost of the digester itself is usually not much less than that of a stationary system. Savings in operating costs are primarily related to savings in steam of about 1500 pounds per ton of pulp. Labor saved in the order of 30 to 50 cents per ton are commonly associated with continuous digester operation.

Continuous pulp production permits more rapid control of pulp quality and for this reason the quality of the pulp produced in a continuous system often is slightly superior to that produced in a stationary system, particularly as to uniformity.

Different Continuous Systems

Table I shows the manufacturers of bleached NSSC pulp. Although there are not many companies engaged in this field, there is a diversity of pulping equipment being used. Continuous bleached NSSC production was originated by the Champion Paper & Fibre Co. in 1952 using the Pandia digester. Cooking times in the order of 40-50 minutes are possible using this digester. A very similar installation began operation in Japan in 1955. In 1958 The Wiggins-Teape Co. installed a Kamyr digester for the production of bleached NSSC pulp, and the most recent innovation has been the start of the Impco digester by Hammermill. These latter two installations have been well described in recent industry literature.[1]

Pulp Quality

Laboratory experiments comparing quality of pulp produced by the various digester systems is given in Table II. In spite of diverse pulping conditions we have found the pulp quality to be essentially similar in all cases. There is a tendency for the shorter cooking time to produce a pulp of slightly higher tear and opacity. This should reflect itself in a slightly lower yield due to the removal of hemicellulose, but no significant differences in yield have been obtained in our laboratory work. It was pointed out that the results reported in Table II are not in agreement with those published by Hammermill in which some loss in yield and pulp strength was noted as the pulping temperature was increased.

Future Developments

The neutral sulphite pulping process evidently permits much greater leeway in mechanical treatment of chips prior to pulping to permit rapid penetration without the corresponding loss in pulp strength usually associated with such severe treatment prior to either kraft or acid sulphite pulping. There is some experimental evidence that pulping times can be reduced even further by increases in pulping temperature when using the neutral sulphite process. On the basis of these indications, it would appear that future installations could advantageously use a continuous pulping system for neutral sulphite pulping which would result in even greater savings in digester equipment while still maintaining pulp quality at an acceptable level.

TABLE I. MANUFACTURERS OF BLEACHED NEUTRAL SULPHITE SEMICHEMICAL PULP

Company	Digester-Type	Approx. Tonnage
Continuous Process		
Champion (1952)	Tube-Type	55
Kanzaki (Japan) (1955)	"	80
Wiggins-Teape (England) (1958)	Downflow	70
Hammermill (1959)	Upflow	150
Batch Process		
Finch, Pruyn	Stationary	70-100
Riegel	"	Disc.
Crossett	"	Disc.
West Virginia	Rotary	75
Consolidated	"	80
New York and Penn.	"	50
Hammermill	Stationary	100
SAFFA (Italy)	Rotary	50

TABLE II. LABORATORY COMPARISON OF PULPING METHOD

	Stationary	Downflow Continuous	Tube Type
Pressure, p.s.i.g.	120	160	160
Temperature, °F.	350	350	370
Total Cooking Time, min.	205	185	60
G-F Number	79	82	75
Unbleached Yield, % o.d. pulp	61	63	60
Bleached Yield, % o.d. pulp	51	53	52
Viscosity of bleached pulp, cp.	20	22	20
Maximum Mullen, % pts./lb.	290	286	287
Maximum Tear	370	368	385
Opacity, 40 lbs. b.w.	78	79	80
G. E. Brightness	82	82	84

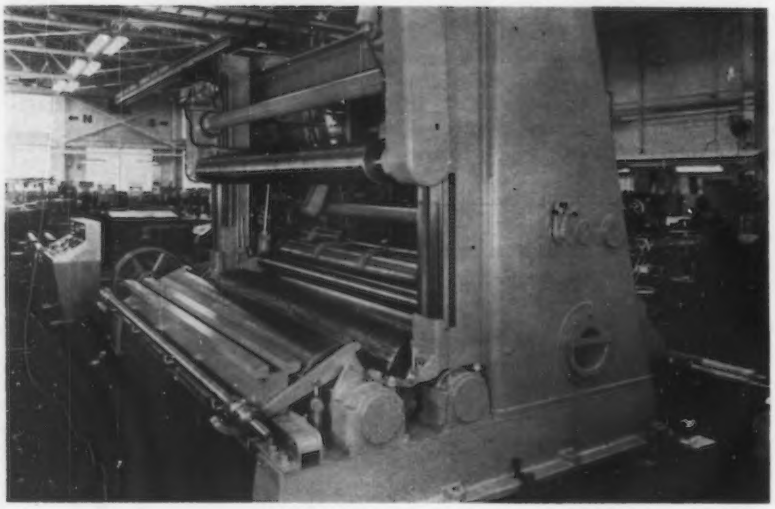
Based on average values of triplicate cooks
% Na_2SO_3 Applied : 25
% Na_2CO_3 Applied : 3
Liquor Ratio : 5:1
Wood: Mixed southern hardwoods (about 50% oak)
Bleaching sequence: C-N-H (15.5% Ave. Cl. Applied)

Summarized from a paper presented at the October meeting of Ohio TAPPI in a program in co-operation with Black-Clawson Co.

[1]See Paper Trade Journal, November 24, 1958 and January 4, 1960.

Recent Developments in New Equipment For Finishing Rooms

Here are the results of an intensive survey by the editors of all suppliers of finishing machinery. A number of items considered still in the development stage are omitted at the suppliers request.



Winders Feature Hydraulic Rider Roll Control

Langston's Speedmaster winders and slitters, built to accommodate rewind drums up to 25 inches in diameter, at present speeds in excess of 6000 f.p.m. at rewind diameters up to 84 inches, are designed with the thought of handling a wide range of materials from tissues to board. Machine is capable of winding a good, dense, but not necessarily hard, roll to larger diameter than before possible, while at the same time eliminating excessively tight rolls which split after shipment.

A hydraulic rider roll control is utilized to counter the rewound roll weight and diameter build-up. It was developed to allow a maximum force downward when starting the rewound roll, with this force diminished gradually as the rewound roll builds up to the maximum rewind diameter required. Another feature is that this maximum force downward can be greater than the rider roll weight itself, thereby insuring a tight core.

Exceptionally dense sheets also call for further modulation of the roll weight as it builds up in diameter. For this the hydraulic rewind shaft lift mechanism augments the hydraulic rider roll control, thereby allowing larger diameter of coated stock to be wound. Automatic control of this tapered rewind shaft lift is, of course, standard in such applications. Hydraulic actuation of both rider roll and rewind shaft also provides for quick pushbutton positioning of these elements during starting of the roll, further reducing downtime due to roll changeover.

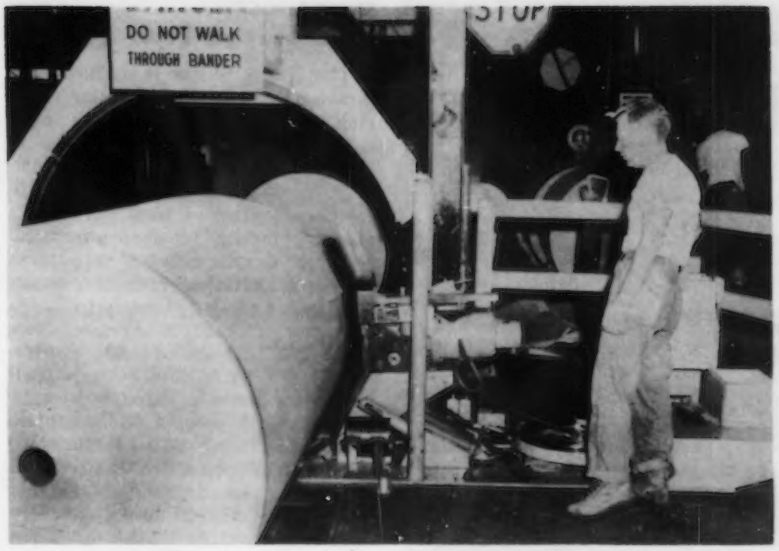
The rotating slitter station includes a threading idler, slitter elements, and spreader arrangement. This station rotates around a pivot point to provide convenient access to the slitters for changeover to a new set-up. Also, the angle of the sheet relative to the spreader can be varied by pushbutton control during the rewind operation to obtain the proper degree of spreading, thereby contributing to better roll separation.

Fixed angle shear cut slitters are used on the Speedmaster Winder, employing the shear cut arrangement of power-driven and friction-driven slitters. The Langston Slitter Locking Device reduces run-out, eliminating concentric rings.

In addition to the bow spreader, the individual spreader arrangement is available. Sheets with unusual finishes susceptible to marring or scratching, can be handled by a driven rubber-covered spreader roll.

The Speedmaster machines have drums and slitter table on approximately the same horizontal plane, with no sacrifice in distance between spreader station and nip of rewind drums. Thus, narrow slits coming out of the slitter station do not interweave as they go into the rewind drums. An automatically controlled threading device is employed to take the sheet from the slitter station into the rewind drums.

To eliminate marring or scratching on the various coated surfaces, all rotating elements are driven, not only the rewind drums and rider roll, but also the spreader roll, cutter shaft, and idlers. This also allows the winder to come up to speed sooner. Optional features available on this machine are: automatic roll ejector, hydraulically actuated nip guard, drum guard, and automatic shaft loader. Various shaft puller designs are readily adaptable. Samuel M. Langston Co., Camden, N. J.



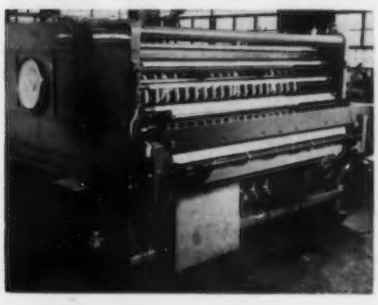
Straps Rolls of Paper Automatically and Precisely

Signode's M-20 series of electric-powered strapping machines combines high flexibility, both in pre-selected tension and in package dimensions, with high packaging speed and minimum operator fatigue. Except when he dials a new tension setting, the operator need only position the package and operate the foot switch. Strap tension, pre-selected from a range of 50 to 1,500 pounds, is applied automatically, smoothly, and without impact.

With suitable conveyors and controls, mixed sizes of paper rolls from 24 inches to 72 inches in diameter are automatically positioned in Model M20-RB Roll-End Binding Machine for precise end strapping. The straps are tensioned and sealed around the rolls automatically, uniformly close to the edges. Other models in the series accept package sizes from 1 x 3 inches to 24 x 20 inches. Special models can be provided with custom-engineered features to accept practically any size package. Signode Steel Strapping Co., 2600 N. Western Ave., Chicago 47, Ill.

High Speed Automatic Winder Perforates Roll Tissue Cleanly

Achievement of the highest continuous running speeds ever attained in the processing of facial type bathroom tissues is claimed by Hudson-Sharp Machine Co., for its redesigned No. 60-B (now BG) Automatic Roll Winder. The machine processes parent rolls at continuous running speeds in excess of 1500 f.p.m. and delivers finished rolls with clean-cut perforations.



A major factor in the machine redesigned reports Hudson, is the replacement of all high speed chains with gearing. Machine downtime is also reduced considerably through the elimination of dirt clogging chain breakage. There are also fewer moving parts to break down. Other innovations include new ease in roll and core shaft handling by a more convenient core loading position, a heavy duty ball bearing winding assembly and a centrally located sequence timer. Core chuck opening is facilitated by air operated cylinders.

The No. 60-BG Winder also features a belt driven unwind stand for accurate web tension control and less web breakage; a shear cut perforator. Also, an improved means of roll break-off insures more accurate sheet counts and a positive break along one perforation (no more ragged tails), add company spokesman. Automatic stripping of finished rolls or logs and optional automatic core loading are also available for complete roll production automation. The Hudson Sharp Machine Co., Green Bay, Wis.

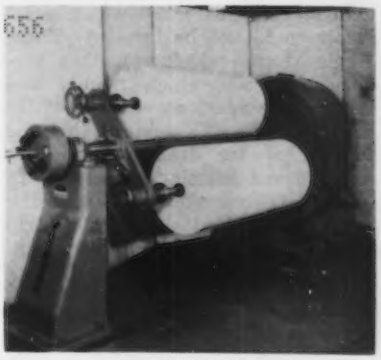
Unwinds & Winds Series Splices at Modest Speeds

The Waldron Turnareel series of rotating two arm unwinds and winds incorporates the best features of different types of continuous unwinds and winds Waldron has made for many years.

The operating side of the machine is fully accessible for threading and splicing. A full line of attachments for operation from manual roll changes to full speed automated flying splices and starts to 2000 f.p.m. are provided as auxiliary attachments to the basic machine.

The Waldron Turnareel utilizes a center mainshaft construction for roll sizes of 18, 24, 30 and 42 inches diameter, and roll weights up to 6000 lbs. in widths to 108 inches.

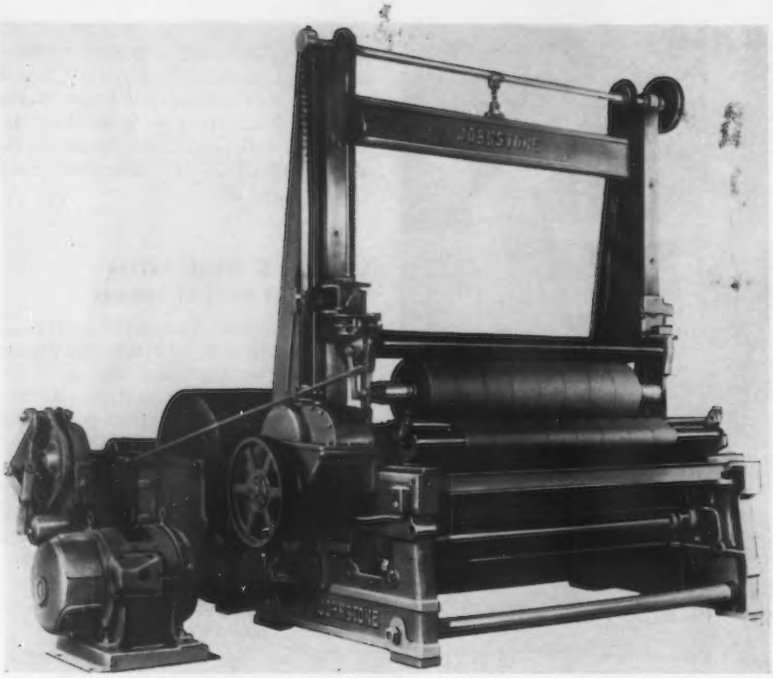
The mainshaft allows the arms to be set and maintained parallel to prevent wrinkling of the web. Reel



rotation is push-button controlled through an electric gear motor furnished as standard equipment. In addition, this construction permits free access under the reel for dolly or truck loading, and does not require a pit for installation of the reel.

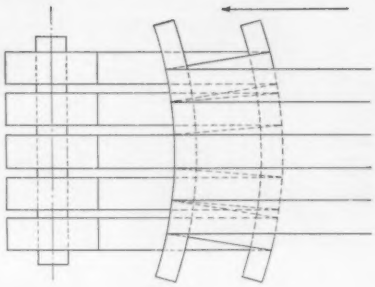
Features of the Waldron Turnareel series are shaftless or shafted operation, air operated brakes with constant tension controls available, and manual or automatic sidelay. Parts of the unwind and wind are common allowing for standardization and interchangeability of spare parts.

Waldron-Hartig Division, Midland-Ross Corp., Box 791, New Brunswick, N. J.



Slit Rolls Are Rewound With Separations in Between

Johnstone Engineering & Machine Co., Parkesburg 5, Penn., has available its FS (Freely Separable) system to permit the slitting of many coated materials which previously could not be handled. These single rewind shaft machines produce slit rolls which readily and easily come apart on removal of the rewind shaft. To achieve this the slit strips are dragged over two fixed; curved deflector bars, as shown in the stylized sketch. In passing around the first bar each strip assumes a diverging angular path. After a short travel the strips approach a second bar. In passing around the second bar, therefore, the strips are deflected back into paths parallel to each other but with a small amount of separation between each strip. Winding is there done in the conventional manner.



For many materials, for example foil and paper laminates or gummed paper or plastic coated paper, this dragging action would cause damage to the foil or the coating. To handle these materials a "one-side" arrangement is possible where the material would be wound with the "protected" side out. Other arrangements are also available to permit winding the protected side in or out as desired on the same machine. Specially suitable for narrow strip work, the FS system is, however, also widely employed for routine work of many types as it assures rolls that come apart without pounding or wedging.

Polished Bevel on Paper Knives Eliminates "Saw-Toothing"

The Jet-Cut Paper Trimming Knife, developed by the Ohio Knife Co., is claimed to be the only paper trimming knife made with the entire face area polished as well as a polished bevel cutting edge. The ultra smooth polished face feature is instrumental in reducing drag and draw, and in maintaining a high degree of cutting accuracy.

The polished surface, plus specially hardened high alloy steel are responsible for longer blade life possible with the Jet-Cut. In most cases, users report up to 2 to 3 times longer service between regrindings.

Short-Run Slitter For Lightweight Paper

The Kiefel Slitter is designed for lightweight paper and similar materials where there are short run or low volume production requirements.

Rolls as narrow as one half inch may be slit and wound. Separate friction control devices, providing proper winding tension, guarantee even rolls despite different core thicknesses or variations in stock gauge. The unit, distributed solely by Leedpak, Inc., 294 Fifth Avenue, New York 1, N. Y., operates at approximately 80 f.p.m. and is equipped with an automatic yardage counter.

Feed and take-up rolls are interchangeable. Other special features include gearmotor for constant control of cutting speeds, and adjustable springaction conical brake for feed roller, eliminating backlash. Twin take-up shafts provide independent winding and allow simultaneous cuttings of various widths from a single bulk roll.

Core Shift Has Air Operated Expandable Metal Buttons

Nashua Industrial Machine Corp., Nashua, N. H., has perfected and patented its Nim-Cor Air Shaft, an air-operated reel bar for mounting rolls of paper, winding, unwinding or rewinding equipment.

The Nim-Cor Air Shaft when deflated presents a smooth surface for easy insertion in rolls. Multiple rows of expandable metal buttons, faced with a brake lining material, form a secure, non-slip contact with the roll core and position the air shaft in the exact center of the core, to minimize vibration at high operating speeds and to assure uniform tension control and true wind.

For coreless and narrow core operation, the Nim-Cor Air Shaft is available with an expanding elastomeric sleeve (also shown in cutaway view). When air is applied to the shaft the sleeve is expanded by the internal buttons to form a collapsible winding surface.

All Nim-Cor units are custom made to user's specifications in diameters of ¾ to 12 inches and in lengths of 3 to 25 feet. The device can be engineered to handle all weight loads.

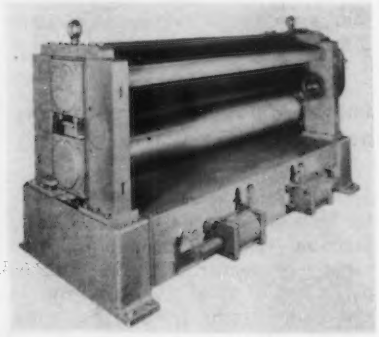
Shaft With Detractable Lugs Permits Higher Unwind Speeds

At comparatively low weight, the tubular construction of the Jagenberg Lug Type Expanding Shaft offers high bending strength. With this type of unwind shaft the wear on fibre cores is said to be appreciably reduced.

Grooved lugs, penetrating through slots in the tube, slide on a conical center shaft. The Lug Type Expanding Shaft is inserted into the fiber core with the lugs retracted. By tensioning the conical center with a spanner the lugs are forced out so that they securely grip into the fiber core.

All lugs protude uniformly out of the shaft whereby the unwindroll is perfectly centered for smooth unwinding. With this shaft higher unwind speeds can be obtained.

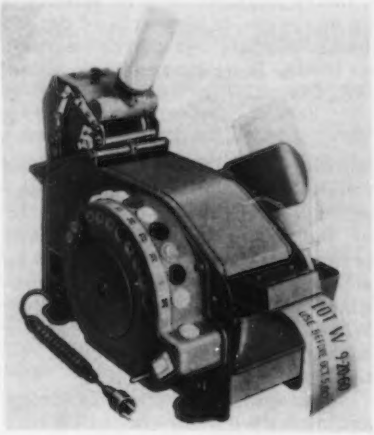
The shaft requires very little maintenance and can be supplied in various widths for all common core diameters.



THE HE-1 EMBOSSERS, with 13 inch diameter embossing rollers, are marked by simplified design and rigid construction. They feature a closed hydraulic-loading system said to afford uniform impressions over the entire web surface, and are air-actuated for instant response. A lift-out arrangement for both impression and embossing rollers permits rapid changeover for new patterns. Bulletin 141 is available from Dietz Machine Works, 20 W. Berkley St., Philadelphia, 44, Pa.

Electric Gummed Tape Dispenser Has Coding-Printing Attachment

Better Pack 555 provides length selector keys which operate with "touch-button" action. A light finger tip touch delivers the required length of tape, ready for application to the carton. The machine is available with a length-selector scale from 6 to 36 inches or from 15 to 45 inches; and with a release key for smaller or greater lengths, should they be required. Two touch-selection of correct lengths is particularly advantageous in speeding carton runs of mixed sizes, according to the manufacturer. However, repeat-length indicators are available to fit over the keys for runs of same-size cartons.



A built-in heater keeps the water thermostatically controlled at the temperature needed for thorough glue activation. The heated glue integrates tape with carton surface, to form a permanent, secure seal. Thermo-moistening is applied by a double brush unit with adjustable pressure control to offset differences in tape widths, weights, glues, in room temperatures and hard and soft water.

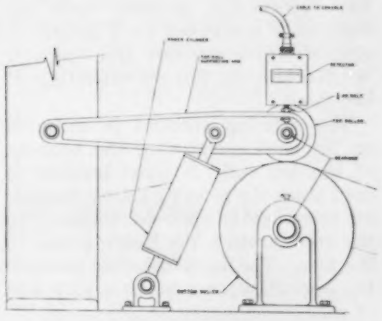
Better Pack 555 operates on 110 v. 60 cycles A.C., and comes with a 10 foot heavy-duty supply cable which may be plugged into any standard outlet.

The Codetaper, available as an attachment for Better Pack 555 dispenser has application where it is desirable to code or label cartons as they are being sealed. Throw-away plastic ink cartridges eliminate the need for constant re-inking by the operator, and assures visual check of ink supply. Cartridges are available in 7 colors. Better Packages, Inc., Shelton, Conn.

Lump Detector Mounts On Sheet Cutters

The detection of minute lumps in a rapidly traveling paper web may be accomplished by a non-contacting instrument, the CICO Lump Detector.

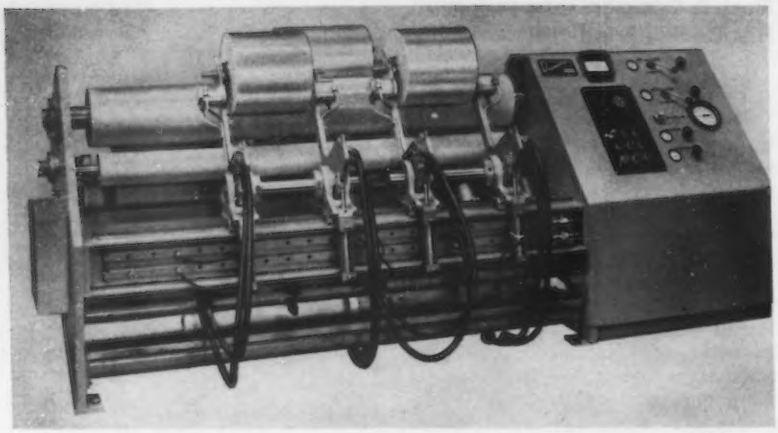
The basic instrument consists of a detector assembly which contains a sensing element, and a control console which may be mounted at a remote location. The sensing action takes place in the nip of a set of steel rolls which have been mounted across the machine. The impact on the rolls by lumps on the web is detected. The sensing element is mechanically coupled to one roll of a set of steel rolls which form the sensing nip.



A single detecting element is sufficient, in most cases, for the inspection of ten to twelve foot webs. Two detecting elements may be used on wider machines.

The main console consists essentially of an amplifier which converts the signal from the sensing head into an alarm or control signal. It also provides for discrimination against the ever present machine noise and distinguishes the normal noise from the minute impacts which lumps deliver to the rolls.

The amplifier controls a relay and closure of the relay may be used to actuate an alarm or to control more



MODEL 800 SLITTER-WINDER has individual rewind shaft and arms for each slit strip. This gives positive contact with the surface winding drum and the controlled center rewind tongue. This is said to provide exceptional ease in handling rolls of paper as there are no heavy mandrels and no spacers to lift. The machine is designed for 1500 f.p.m. speeds, to trim webs of desired widths, and to rewind rolls up to 30 inches diameter (larger on request). Slitting may be by shear cut and/or razor blade. Score cut can be provided. John Dusenberry Co., Inc., 389 Allwood Rd., Clifton, N. J.

elaborate accessories such as sorting gates, markers, and others.

For use on a sheet cutter, the sensing rolls are mounted just prior to the cutting knife and are solid steel rolls three and seven inches in diameter respectively. The rolls have been machined to a tolerance of a few ten thousandths so that 0.001 inch projections may be detected. The bottom roll is fixed while the top roll is controlled by a hydraulic system which permits the operator to open the nip during threading of the sheet.

The sensing element is mounted on the arm supporting the bearing of the top roll. A tight bearing is used since the sensing action depends on the transmission of impacts on the roll through the bearing and to the arm. The lump detector controls the operation of a sorting gate and of a crayon marker.

A sorting gate is controlled by a mechanical system which is coupled to the cutter drive and times the rejection of faulty sheets.

A crayon marker is used primarily for periodic checking of the operation of the detector. The location of the mark is always in line with the fault detected. The marker may also be used in evaluating the performance of the detector relative to that of a human operator by providing the operator with a second crayon of different color or different marking position.

At present a bell and a counter are offered as standard accessories with the detector. They provide a warning for the operator that his immediate attention is needed and serve to keep a record of the number of faults detected over a specified period. Very high sensitivity can be achieved by the installation of auxiliary rolls across the machine. Where lesser sensitivity is adequate the detector may be mounted directly on existing equipment.

Marking devices as well as timing and memory devices are available as accessories. Each installation requires special consideration in this respect, however, and they are not described for this reason.

The instrument is versatile and may be installed on a large variety of machines; for example, calender stacks and high speed web printing presses. Waldorf Industrial Controls, Huntington Station, L. I., N. Y.

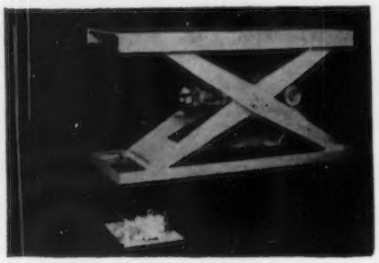
No Annular Rings From Shear-Cut Slitter

A shear-cutting slitter performs without creating the familiar annular rings in rewound rolls of paper, reports Samuel M. Langston Co., Camden, N.J. Equipped with a new type locking device, the cutter-holder and cutter can be secured more tightly to the slitter shaft, yet does not suffer any distortion in shape in locking-up. It also can be easily moved sidewise on the shaft as required. Cutter-holders and cutters can be furnished for existing Langston slitters and winders.

Scissors Lifts Hydraulic or Air Operated

High-capacity scissor lifts for loading and unloading sheet stacks are now being marketed by Lamb-Grays Harbor Co., of Hoquiam, Wash. The lifts stress safety, control sensitivity, and are designed to give smooth performance in constant service.

The air-driven model, a simple platform measuring 24 x 72 and 8 inches high in its collapsed position, has a vertical travel of 42 inches and a lifting capacity of 6000 lbs. Start and stop are positive and quick, permitting accurate positioning of the load. Travel speed is constant. For safety, the lift is self locking and will hold its load if the air supply is interrupted. In stationary use, the exhaust can be piped out of the work area. For portable use a muffler can be supplied and the

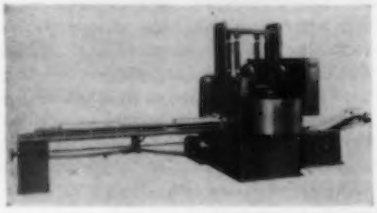


unit can be connected to the most convenient air supply.

A second model differs only in that it is powered by a self-contained hydraulic unit. Only the electrical source need be disconnected to make it portable.

Improved Paper Log Cutter Runs at 180 Units Per Minute

Many improvements in the design and operation of its Paper Log Cutter have been made by Hudson Sharp Machine Co. The machine is now capable of cleaner, straighter cuts on paper logs of toilet tissue, roll towels, and folded tissue from either winding or interfolding equipment and users are reporting speeds in excess of 180 rolls or packs per minute. An improved indexing and handling of the logs throughout the cutting process provides positive close tolerance



product lengths of from 4 to 12 inches in ½ inch increments.

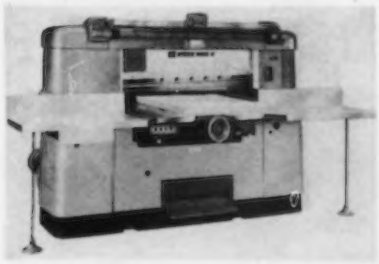
Eccentric bearings have been redesigned and improved and are now easily replaceable. The drive to the cradle provides smoother, more positive operation of each cutting stroke and insures longer-life service. Counter weighing eliminates vibration at the high speeds at which the machine can be run.

Hudson Sharp is located in Green Bay, Wis.

Trimmers Available In Nine Models

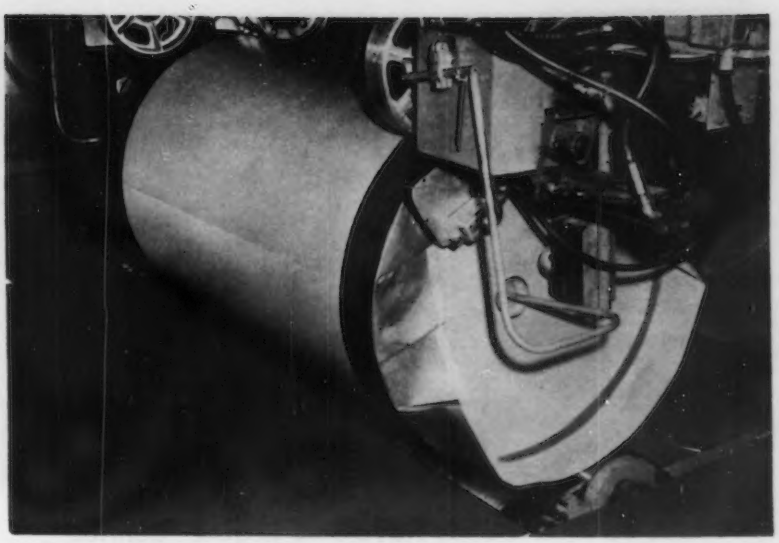
Seybold's "Saber II" power paper trimmers are designed for more production, greater accuracy in cuts, greater safety through an interlocking system and low maintenance due to accessibility of fittings from the outside of the machine. Nine models are available in the 41, 47, and 54-inch sizes.

"Saber II" features include a clamp foot treadle recessed in the base of the machine where it cannot be accidentally hit or stepped on; clamp pressure adjustment which can be made by a thumb wheel and gauge at the front of the cutter; and an overload protection which cuts-out the electrical system, stopping knife action instantly if cutter is overloaded. To facilitate knife-changing, the knife-to-cutting-stick adjustment can be made from the



front of the cutter. Wrap-around safety guarding has been deepened and extended with improved access for lubrication.

Major elements "Saber II" cutters are the full-hydraulic cushion-contact clamp; inline downpull cutting action; fully automatic "Auto-Spacer" with six-sided spacer bar and removable job strips; one-motion, two-hand throw-in; knife-changing knobs that are part of the electrical system; and electromagnetic brake-clutch. Power is supplied for the 41-inch model by a 3 h.p. motor and by a 5 h.p. motor for the 47 and 54 inch models. Harris-Seybold Co., 4510 East 71st Street, Cleveland 5, O.



Automatic Crimper Improves Roll Wrapping

An automatic roll crimper, said to make machine-perfect crimps in heavy and multiple-thickness roll wrappers at high production speeds, is the latest addition to the line of roll finishing equipment manufactured by Lamb-Grays Harbor Co.

The Lamb automatic roll crimper eliminates the damage problem due to "dog ear" projections common to most crimps. These projections—normally occurring at each crimp around the periphery of the roll—are vulnerable to transit and handling damage and, when torn, permit dirt and foreign matter to enter the roll.

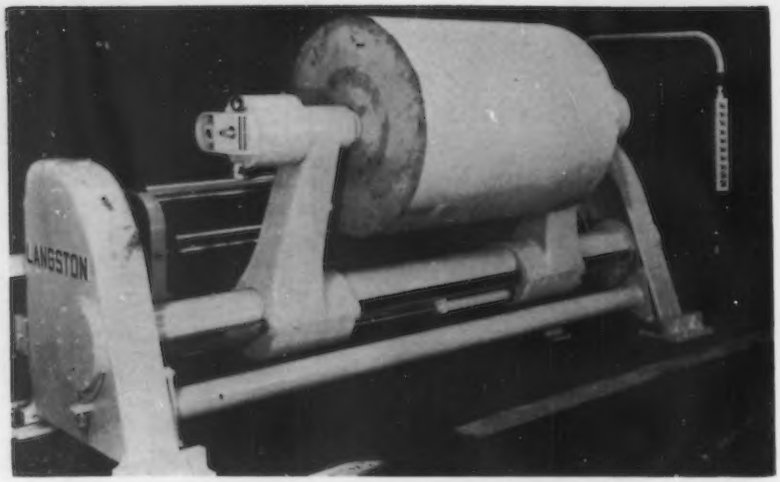
By crimping in small increments with the aid of several patented devices, the Lamb crimper yields a tightly formed edge that is uniformly smooth, hard, and damage resistant. The machine can crimp both roll ends simultaneously in 20 seconds.

Another feature of the crimper is that it adjusts automatically to rolls of varying and intermixed length and diameter. Rolls do not have to be grouped by size, but can be run through at random as they come from the winders. Although it can handle lightweight wrappers, its primary production advantages are gained where heavy wraps have been the deterring factor in maintaining high production and good appearance. Lamb-Grays Harbor Co., Inc., P.O. Box 359, Hoquiam, Wash.

Dispenser Automatically Feed Out Next Tape Strip

Better Packages, Inc., of Shelton, Conn., consider their Better Pack Electric Robot tape dispenser the fastest for volume production sealing requiring same tape lengths repeatedly. As the operator picks up tape strip immediately and automatically another strip is fed out and held ready to pick up. Having become tacky while previous strip was applied application is made faster with a minimum rub-down effort. This "curing period" of the heavier glue on reinforced tape also increases the strength of the closure.

The Better Pack Robot has all the advantages of "feathertouch," thorough glue conditioning with hot water moistening and automatic cutting of paper or reinforced tapes, etc. It is equipped with auxiliary key for semi-automatic operation during periods of intermittant use. The Robot Repeater can be equipped with auxiliary foot treadle for packer controlled dispensing of repeat lengths.



Shaftless Unwind Stands Have Side Register Control

The Langston series of Shaftless Unwind Stands eliminate the need for coring up or shafting a roll of paper, and can be easily adapted to handle paper reels also at a considerable saving in roll loading time. The roll is gripped and picked up from the floor, either from a dolly or from floor-mounted conveyors, and lifted into unwind positions by pushbutton controls mounted in a pendant.

Present Stand models range in width from 42 to over 130 inches and diameters from 42 to 84 inches. The various Stand models are sized not only by roll width and diameter, but also by roll weight. The weight is dependent upon several factors such as: roll width, roll diameter, and density of the sheet itself. This series of Stands can accommodate roll weights in excess of 15,000 pounds.

Narrow rolls down to 15 inches wide are handled on the smaller model Shaftless Stands, without modification, and smaller width can be accommodated on all models with special cones. There are many and varied cones, both round and square, which are sized to accommodate the core diameter of the parent rolls themselves. Changing of cones for various core diameters can be done in a matter of minutes by one man. With the present Stand design, there is a possibility of making the Rewinder a one-man operation, says the company. Hydraulic power is utilized throughout for lifting and loading, clamping, and lateral adjustment.

Air-operated water-cooled brakes, one on each arm, are said to give better distribution of braking tension and generally better control of the sheet. These brakes are built for manual control of tension, but may have automatic tension control, pneumatically-operated through a load cell arrangement. In this way, the Shaftless Stands can be utilized behind existing Winders making the Unwind Stand a self-contained unit not relying on the winder for constant tension control.

Side register control and hydraulic oscillation are also available. The side register components can be either the electric eye for following a printed web as well as the edge of a sheet or a pneumatic scanner head for following the sheet edge alone. Oscillation can be incorporated either with or without side register control, to give a continuous reciprocating motion of the Shaftless Stand for helping to eliminate hard spots, corrugations, and similar roll defects. Within limits, both the frequency of oscillation and amount of oscillation can be varied. Samuel M. Langston Co., Camden, N. J.

Scissors-Lift Tables Lift Up to 24,000 lbs.

The Southworth LT-12 Lift Table extends the line's range of available capacities from a low of 500 lbs. in the smallest portable model to a high of 24,000 lbs.

The Model LT-12, employing the same basic hydraulic-powered, scissor-type lifting mechanism as other Southworth Lift Tables, has the additional advantage of a collapsed height which is only 8-½ inches. It's extended height is 40 inches and it is available with platforms in various sizes, as well as with tops suitable for turntables, conveyor units, fixtures or other custom-built working devices.

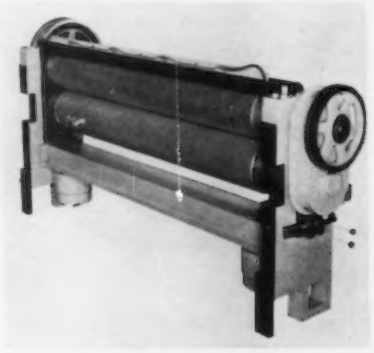
Ease of installation is a particular feature. This tandem table, with its self-contained motor and pump assembly, can be simply positioned by the machine it is to serve and merely plugged in. If a recessed installation is preferred, a shallow excavation just deep enough to contain the table's collapsed height can be most economically prepared. Then the table top literally becomes an integral part of the regular floor surface.

There is free access to the work load from any angle at all times. Other specifications are: capacity, 24,000 pounds uniform load; minimum size platform, 40 inches x 144 inches x ½ inch with 8 inches skirt; vertical platform travel 31-½ inches; hydraulic components, 2 rotary gear pumps and 2, 1 h.p. motors for 220/440 or 550 volt, 3 phase, 60 cycle current; controls, 2 motor line starters, 2 relays, 1 low voltage transformer for control circuit on 110 volt, 1 foot switch or pushbutton station. Southworth Machine Co., 30 Warren Ave., Portland 2, Mo.

Embosser Feature Matched Steel Rolls

An embosser with matched steel rolls is manufactured by Paper Converting Machine Co., Green Bay, Wis.

The embosser features 20-inch diameter air loaded steel rolls with

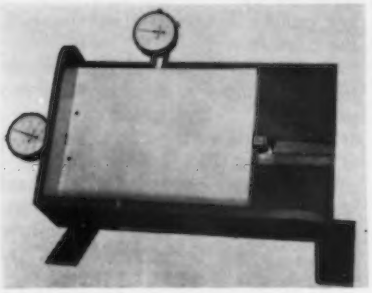


precision adjustable nip control, allowing for positive adjustment. In the event rolls are separated, they can be brought back to their original operating position accurately.

Available as a separate installation, or as an attachment to rewinders, folders or printing presses, this embosser has fully enclosed, oil lubricated herringbone gears and precision spherical roller bearings with tapered inner race arranged for hydraulic removal. Automatic cleaning and lubricating of the embosser rolls is an additional feature.

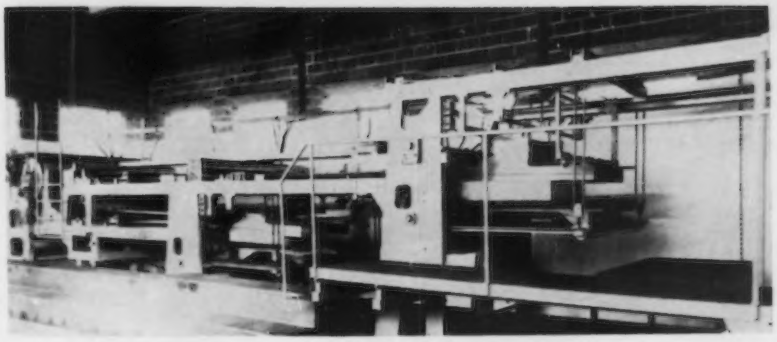
Paper Gauge Checks Length, Width, Squareness

To make sure paper is true in size is the purpose of the "Murco" Paper Size Gauge, states D. J. Murray Manufacturing Co., Wausau, Wis. When accurately cut paper is placed on the bed plate, the dial indicator reads zero in both positions. Any cut that is off size, either on the width or out of square will immediately register plus or minus on the dial indicator. The left hand indicator checks the cut for square . . . the top indicator checks the cut for width. The movable slide at the right checks the cut for length. Bed and inside surfaces of left end and bot-



tom walls are machined and precision ground, assuring an absolute true checking surface. The scale is imbedded in the bed plate, flush with the surface. Overall dimensions of the unit are 18 inches long; 10 inches deep; 12 inches high; checking table inclined to 45°. It is adjustable from 7½ inches minimum to 15 inches maximum in length.

TRAY TYPE SISSORS LIFT operates on relatively low hydraulic pressure from a self-contained pump. This is said to offer the advantage of lower h.p. requirements and reduced internal forces an chain linkages. The tray can be of varying dimensions. The unit is just nine inches high in collapsed position. It has a 36-inch vertical travel and lift capacity of 5000 lbs. Lamb-Grays Harbor Co., Inc., P.O. Box 359, Hoquiam, Wash.



High Speed Cutter Sheets and Sorts Automatically

With Mamco's sheet cutter-sorter units, the web stock is inspected electronically and the sheets are sorted at very high speeds, entirely without any operator having to watch the operation. Gating to the separating layboys may be controlled electronically, humanly, or by preset count.

There are two-position and three-position gates. The former permits the stacking and jogging of two separate 60-inch piles on the layboy, either "perfects" and "rejects," or "perfects" and "test samples," or alternately two "perfects" (which reduces downtime). A three-position gate permits three piles: a "perfects," a "rejects" which has salvage value, and "broke" to the pulper (or for test sheets). There is also a method of ejecting predetermined height lifts of sheeted stock to an automated cut-size line. Counters and markers can be attached to the layboys. The counter on the "perfects" layboy can adjust itself to account for any "rejects" gated to the other layboy.

The electronic inspection head is mounted between the rollstand and the cutter and continuously scans the sheet. Defect signals are transmitted to a sheet classifier which carries the "memory" forward and transmits an operating signal to the reject gate mechanism, so as to discard the imperfect sheet. The position of the defect location with respect to the knife cutting line is held to within 1/32 inch when the sheet is travelling at speeds up to 1000 f.p.m., or 300 knife cuts per minute, whichever is first attained. Next after the detection unit are the draw or measuring rolls of the cutter followed by the stationary and revolving knife units. Speed of the revolving units may be varied for any given speed of the draw rolls to produce the various sheet lengths. Once the ratio is set, it remains constant. The draw roll may pull in the web at speed between 100-1000 f.p.m. Next is the reject gate. This is followed by an overlapping delivery tape system leading to the piling station.

Sheets can be cut to within 1/64 inch for squareness and length. The cutter sorter is also equipped with static electricity eliminating devices. Maxson Automatic Machinery Co., Westerly, R. I.

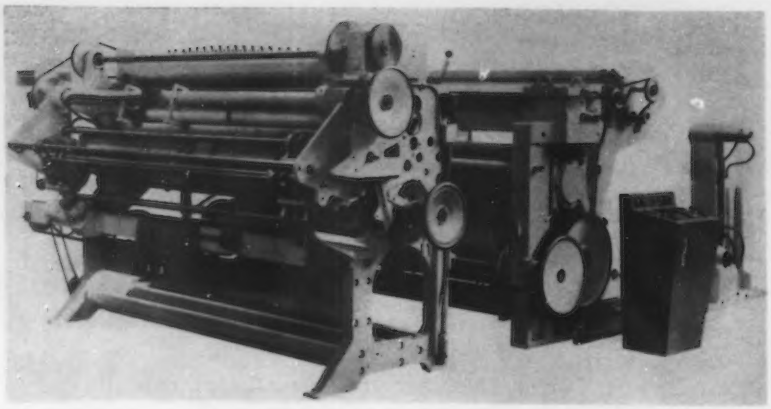
Oil-Shear Holdback Controls Web Tension In Slitter

The Web Controls Corp. announces the availability of a Universal Slitter that controls tensions by incorporating an oil-shear hold-back and rewind clutch. Automatic constant tension and controlled, or tapered tension on the rewind is accomplished by means of a follower on the unwind.

Selection of web tensions is made by the operator on a Vernier Master Control feeding filtered voltages (d.c.) into coils of the Oil-Shear units. Master control settings may be adjusted two or three times during processing, dependent upon build-up. For automatic control a follower or tachometer generator system is used.

Misaligned material on the unwind can be fed into the slitting head at a consistent edge alignment by means of a low pressure, air-operated sensing head and cylinder which oscillates the ball bushing mounted unwind stand. A skewing roll has been provided for uneven webs across the width. For radically uneven webs (bellied dropped edges, etc.) a Mt. Hope roll or herringbone roll is available as an option.

Various methods of slitting—burst, score, shear and razor blade—may be obtained by interchanging



90 INCH AUTOMATIC REWINDER, Model No. 2481, has these following features: continuous operation at speeds over 1000 feet per minute; mandrels remain in the machine; one operator for two machines with no manual labor involved; shear cut perforator. The embosser has 20 inch diameter air-loaded embossing rolls with micrometer adjustment for accurate control of nip pressure. Shaftless, belt driven unwind stand takes 60 inch diameter jumbo rolls and has automatic constant tension dancer roll control. Manufactured by Paper Converting Machine Co., Green Bay, Wis.

slitting cartridges. Pull rolls are put to use for stripping the material from the unwind. Two rewinds will wind, independently, at constant tensions, double sheets of web material, single sheets slit into various widths on either rewind or both at the same time, regardless of slit widths.

It is possible to stagger cuts on the individual rewind shafts, giving a better side finish and eliminating interlocking spools and separator plates. The rewind shafts feature a skewing adjustment, rubber slugs for paper core gripping, or pneumatically expanding arbors, as well as a bayonet lock for quick loading and unloading. Electronically controlled variable speeds may be incorporated. In most cases rewind and unwind shafts are interchangable. The Slitter is furnished in widths from 8 inches to 72 inches. Web Controls Corp., 318 Briarcliffe Road, West Englewood, N.J.

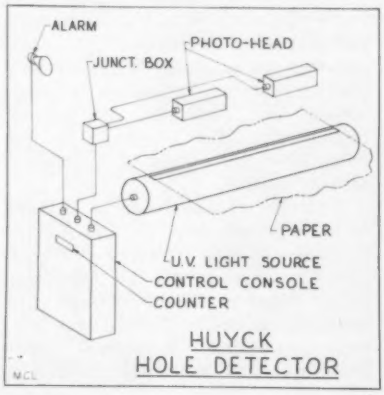
Detects Holes In Sheet by Photoelectric Transmission

WIC's Hole Detector is a noncontacting, photoelectric, transmission type instrument for the on-the-machine detection of holes in moving paper webs.

The standard detector performs on coated papers, bond, and other fine writing papers and newsprint, as well as a large variety of other papers. The hole detector may be used on either production paper machines or on sheet cutters.

The following features are of special interest: The instrument will positively identify holes of 1/32 inch diameter in webs travelling at speeds from 100 to 1000 f.p.m.; it is insensitive to normal paper flutter and variations in draw; it is insensitive to ambient light so that light shielding is unnecessary; the paper position as well as the instrument alignment are not critical; the detector will not respond to dirt on the sheet, spots, shiners, and other similar imperfections; standard equipment permits the detection of faults to within ¼-inch of the web edge.

The hole detector consists of a light source, photoelectric sensing heads, a console, and an alarm system. The continuous light source is normally positioned underneath the sheet. Simple light shields provide adjustment for deckle. The photoelectric sensing assemblies are mounted above the sheet about 20 inches from the light source. They detect light which is transmitted through holes in the sheet. One assembly is provided for each two foot width of web.



All electrical and electronic functions of the instrument are controlled in the main console which is mounted either at the front or the back of the machine and within a few feet of the light source and sensing assemblies. The console contains power supplies for the light source, sensing assemblies, and main electronic circuits. In addition, a calibrating meter and individual calibrating controls for each of the sensing heads are mounted on the front panel of the console.

Ordinarily the signal from the detector actuates a relay in the console. The relay closure connects ordinary line voltage to the circuits of an alarm box which contains a counter and an alarm bell. The alarm box is mounted at the machine tender's station or other convenient place. An additional feature of the alarm box is a set of neon monitors. Failure of any one sensing head can be detected by the operation of its respective neon.

Hole detectors requiring more than three photoelectric inspection heads are equipped with two consoles, a control and power supply console respectively. For equipments using three heads or fewer, the power supply and control sections are packaged in a single console. Huyck Industrial Controls, 755 Park Ave., Huntington Station, L. I., N. Y.

Undercut Principle Designed Into Trimmers

The Smith & Winchester Manufacturing Co., South Windham, Conn., has completely remodeled its line of Trimmers. Built for high production with great accuracy of cutting, the new model "Trimmastre" comes in standard sizes of 56, 76, 86, and 96 inches.

The basic undercut principles widely known in the trade for precision cutting of papers are used by the remodeled Trimmers. In the cutting operation, greater accuracy results when both sides of a ream of paper are held firm. For difficult cutting operations (light weight paper, highly coated paper, board, etc.) where the accuracy of top to bottom cut is of utmost importance, Smith & Winchester recommends the "Trimmastre."

Featuring a solid back table for

automation in loading and unloading, a swinging front table with no side obstructions, to ease cutting, and electro-magnetic operation of the high speed knife, the "Trimmastre" is completely equipped with an air film, power back gauge and "Spacemastre" electronic automatic spacer.

Electronic Back Gauge Control Automates Trimmer

The "Spacemastre," an electronic automatic back gauge control for guillotine paper trimmers can be installed on any width or length machine that has a screw operated back gauge.

While the standard units are furnished in either 10 or 20 positions, multiples of 10 positions can be furnished on special order. Each position can be adjusted for any dimension. The average accuracy is 4/1000 inch on repetitive runs. Settings can range either up or down which means that all trimming can now be done by merely turning the lifts 90° each time.

To function, the operator selects the proper range unit and inserts it in position 1 of the control cabinet located on the top of the trimmer. He turns a pointer knob on the range unit to approximately the desired setting; he next turns the fine adjustment knob. The sequence is repeated through all positions that are to be used. Any position may be omitted at will by setting the switch for that position to "off." After each cut, the machine automatically moves to the next position unless the "cut repeat" switch is used, upon which the machine repeats the dimension until the "cut repeat" is turned off.

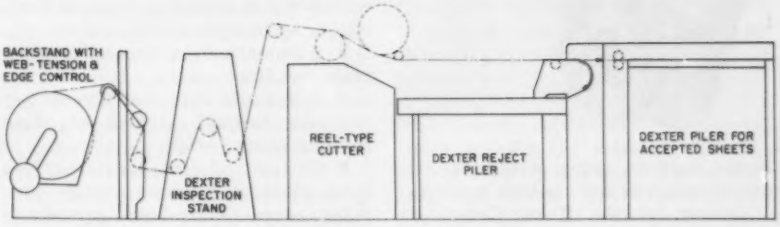
The "Spacemastre" positions at the rate of 8 inches per second until within ½ inch of the final position, at which time it shifts to low speed, ⅛ inches per second until dimension is reached. Since this point is always achieved by the machine approaching the knife, wear of the screw, nut and bearings do not affect accuracy. Operation can be made manually by throwing the "auto-manual" switch and using the push button station. With either manual or automatic operation, it is impossible to move the back gauge once the clamp has started to move.

The following operator aids are supplied on the cabinet: a white plastic matte surface strip extending across the front of the control cabinet for pencil marking the cutting dimensions opposite each position; Indicator lights which show the position in use; one switch to turn all power on and off; one switch for each position to eliminate any positions not used; and a cycle switch for moving to the next cut in the event the operator forgets to restore the "cut repeat" switch.

The control unit requires 115 volt 60 cycle single phase supply, while motor power must be either two or three phase of any of the regular industrial voltages and frequencies.

The "Spacemastre" works through the principle of balanced bridge circuit between master potentiometer installed at the end of the screw and variable potentiometer located in the programmer. Any desired dimension can be fed in the programmer by manual rotation of the knob in the programmer prior to knife operation. With the exception of the driving motor and magnet clutch assembly, there is but one moving wearing part, the control element on the lead screw, which has an estimated life of 4 million cycles and is easily replaced. The Smith & Winchester Mfg. Co., South Windham, Conn.

Sheeter Also Rejects Defective Sheets Automatically



The Dexter Automatic Paper Sorter/Inspector automatically inspects the web for lumps or holes, then sheets it to size, stacks acceptable sheets, ready for packing and shipping and directs defective sheets to reject pile.

The web unwinds from the shaftless unwind stand through tension control rolls to the inspection stand. The web passes through a lump detecting device that is pre-set to desired standards of acceptability. If a lump is detected an electronic signal is flashed to a memory device. A marking device (optional) can, at the same time, mark the edge of the web at that point for later visual inspection. After cutting, the sheet bearing the imperfection will be directed to the reject pile.

From the lump detector the web passes between an electric drum and brush unit. If one of the fine bristles of the brush contacts the drum through a void in the paper, an electronic signal is sent to the memory unit. An optional marking device is available at that point, too. After cutting, the sheet with the imperfection is diverted to the reject pile.

After leaving the inspection stand, the web travels to the reel-type cutter where it is sheeted to size. It is then discharged onto tapes for delivery to layboy. Sheets are cut to within 1/64 inch of nominal size. Web tension is controlled at unwind stand. An electronic edge guide keeps web in line. Web edges can also be trimmed by machine if desired.

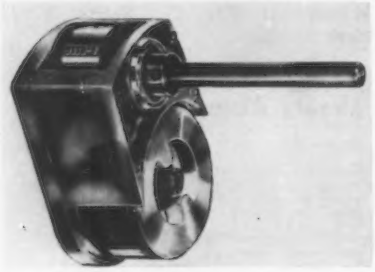
Sheets travel from cutter to piler without overlap, 15-20 inches apart. This permits one sheet to partially settle on he pile and be jogged before the next sheet arrives. Slow-down wheels retard the sheet sufficiently to prevent damage to the front edge upon hitting the piler stops. Air jets hasten sheet settling, side joggers assure correct align-

ment of the pile. The sheets are stacked evenly and in perfect condition, ready for packing. Simpler slowdown and jogging is employed in the less critical reject pile. The Sorter/Inspector will handle rolls 32-82 inches wide and 42-inches diameter and cut sheeted length from 36 to 80 inches. Miehle-Goss-Dexter, Inc., 2011 Hastings St., Chicago 8, Ill.

Roller Coder-Printer Uses Solid Plastic Ink

High speed coding and printing without the mess and fuss of fluid inks are now possible through the development of a new series of machines.

The Teko Model 100 Series of coders and printers are designed for attachment to packaging machines or powered conveyors of all types. They synchronize with the action of the parent machines, printing onto



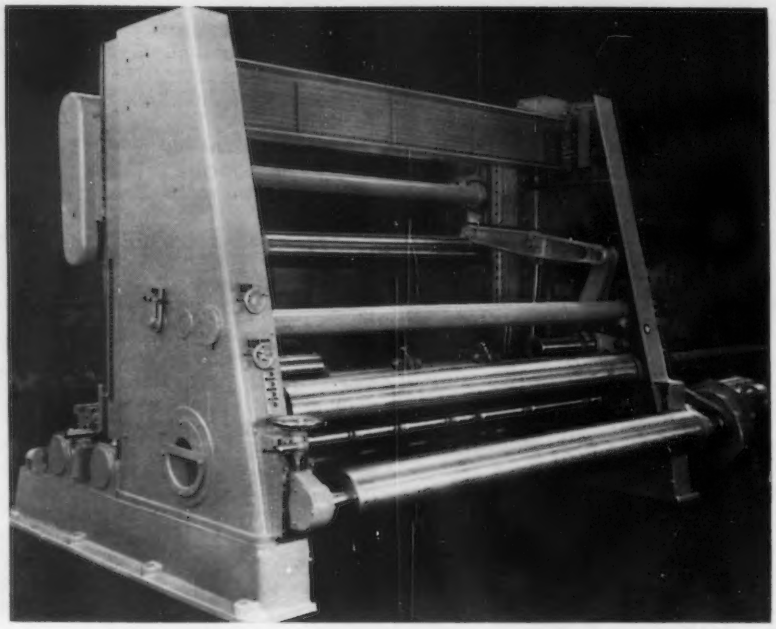
boxes, cartons, paper wrappers, and other porous or semi-porous surfaces.

Inking of the Teko Coders is done by a roll of Porelon solid ink. Porelon is the trade-mark for micro-porous, micro-reticulated plastics. This Porelon roller, a self-contained inker, replaces fluid inks, solvents, fountains, felts and the maintenance connected with such items; it cannot drip, evaporate or gum up; when exhausted, it can be changed in less than 10 seconds.

The coder itself measures 7 x 4⅜ x 3 inches, with an extended drive shaft 8 inches long and antifriction bearings.

Printing head diameters of 6, 8, and 10 inches are available to accommodate various pitch distances in the feeding of packages through conveyor systems.

Teko coders print from any position, onto any side of the package. They will print up to 250,000 quick-drying impressions onto any porous or semi-porous surface, with a single Porelon roll. Teko Coders are manufactured by the Thomas Engineering Co., 9257 N. Laramie Ave., Skokie, Ill.



Winder Said to Depart from Conventional Concepts

The Speedmaster winder, is said to incorporate a number of features departing from conventional winder concepts and providing unusual flexibility. Among these features are:

- Automatic draw control between main winding drums.
- Automatic compensation of nip pressure through control of rider roll and rewind shaft.
- Slitters and spreader roll carried in a common rotatable cradle providing precise control over spreading.

The design is available for speeds to 7500 f.p.m. and roll diameters up to 84 inches, and to handle grades from lightweight tissues to heavy board.

The Winder achieves uniform density of rolls by automatic control of the draw between the rewind drums. Compensation for the increasing weight of the rewound roll by automatic control of rider roll weight is also provided. In addition, the rewind shaft brackets can be power lifted to automatically provide supplemental reduction in nip pressure between rewound roll and the winding drums.

These features make the winder particularly adaptable, it is said, for dense printing grades, both coated and uncoated, where larger diameter rolls are required.

The slitters are of the Langston precision design, guaranteed to run true within .001 inch. By minimizing variations in web width, these slitters produce rolls free of annular rings.

Also included are removable ways for rider roll and rewind shaft carriages, roll ejector, shaft loader, power engagement and disengagement of slitters, automatic threading and precision rewind shaft bearings. Samuel M. Langston Co., Camden, N. J.

Center Shaftless Unwinds, Winds Need Less Space

"Phantom axis" unwinds and winders, both of which feature a design which eliminates the center shaft, are said to be capable of handling larger web roll diameters in about 25 per cent less floor space and height than conventional machines.

Both machines, manufactured by Frank W. Egan & Co., Somerville, N. J. offer speeds in excess of 1000 f.p.m. and web widths through 120 inches. Other twin features are: manual or power side shifting, air chucking of cores or shafts and knife cut-offs.

In addition, the unwinds feature a pneumatic constant tension system, flying splices at full machine speed and a provision for splicing with either the inside or outside of the web facing upward. The winder assures smooth transfers at full machine speed and gives the operator a choice between constant and tapered tensions.

Reverses Reams Before Wrapping

A Ream Rotator which can be incorporated into automated cut-size finishing systems, is available from Lamb-Grays Harbor Co., Inc. The Ream Rotator permits automatic reversal of the sheets before wrapping. Differing orders can now be processed from the same pallet load, with wire or felt side up as required.

The Ream Rotator is completely automatic in operation and can be set either to pass through or rotate the ream. It has a maximum capacity for sheets 9 inches wide by 15 inches long, and a 7 inch opening. It features automatic feed, automatic clamping and roll-over, and automatic discharge on a motorized belt conveyor. Lamb-Grays Harbor Co., Inc., P. O. Box 359, Hoquiam, Wash.

Skid Turner Simplifies Handling of Paper

In addition to the savings in both time and labor which soon equal its initial cost, the Southworth Skid Turner, is said to offer certain operating advantages such as the reduction of waste, more accurate trim, easier skid to pallet transfer, and a quicker method of inverting paper.

With the Model ST-5 Skid Turner it takes one man a total of 55 seconds to turn a full skid of curly or wavy stock so that the curl is down and a more accurate trim may be obtained, especially on stock that is embossed on one side only.

Where bulkiness results from air trapped between sheets with vellum finishes or rough embossing, the skid load can be compressed prior to trimming or transfer to a pallet for shipment with the turner.

A designed side structure gives additional support of the load during the turn, thus providing a three-way positive control and eliminating the possibility of squeeze-induced wrinkling, offset or other damage.

Model ST-5 is fully portable, completely will turn any type skid, handling sizes from 28 inches by 38 inches to 52 inches by 76 inches, and accommodating heights from 24 inches up to 74 inches, exclusive of the skid.

With a capacity of up to 5,000 pounds, the Southworth Skid Turner is ready to operate as soon as delivered. When not turning skids, it is designed to serve as a lift table as well. The turner has a length of 96 inches, a width of 60 inches, and is 96 inches high. Motor specifications, 3 h.p., 220-440 volts, 3 phase. Southworth Machine Co., 30 Warren Ave., Portland, Me.

Strapping Tool With Variety of Overhead Mounts

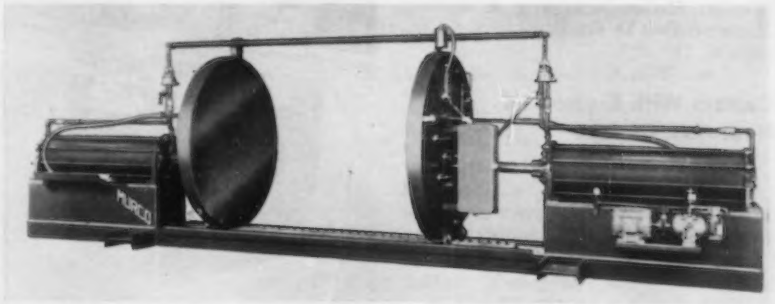
The Stanley Electric Skid Magazine, a portable electric magazine tool is designed for precision strapping of skids, pallets, unit packs and large cases. Used in conjunction with overhead mounts, it offers operating versatility while promoting savings in time, space, and manpower. The ESM may be used either horizontally or vertically, on high and low pallets and skids. Simple adjusting clutch allows pre-selection of tension, insuring equal tension for each strap. One hand lever action accomplishes sealing and cutting easily and speedily and controls automatic feeding of seal from special magazine.

Three types of overhead installation are possible: single track mount, bridge type track, and boom wall mount. The boom wall mount permits the ESM to be swung out of the way when skid is being made up, yet is within handy reach of the operator. The bridge type overhead track and tool balancer allows the ESM operator complete and easy strapping coverage over the entire packing area. The single overhead track and counter balancer permits the tool to be easily raised or lowered, moved to any part of the 2 x 20 foot area. Stanley Steel Strapping, Division of the Stanley Works, New Britain, Conn.

Trimmers Have Cushioned Hydraulic Clamping

Lawson's heavy-duty hydraulic clamp Pacemaker trimmers are available in six sizes: 46, 52 and 55 inches rated at 50 strokes per minute, and 60, 66, 69 inches rated at 42 strokes per minute. Specially engineered features of the trimmers include: rear table slot closing device to facilitate rear loading or "swinging" the lift; two-end knife pull utilizing a double crank design; three-point knife bar support to prevent bowed or concave cuts, double overload and non-repeat safeties; and cushioned hydraulic clamping. Available as optional equipment are Lawson's air cushion device, an adjustable flexible contour Clamp that compensates for surface irregularities due to ink buildup or to the nature of the paper stock itself; and Lawson's Electronic Spacer that is reputed to move a lift automatically through a complete series of cuts and trim-outs with .002 inches accuracy.

Regular features include: two-hand safety operation; skid-proof tiptoe treadle for gauging the cut; 6½-inch clamp opening; pop-up cutting stick ejector; gears operating in a sealed bath of oil for constant lubrication; simplified knife changing; floodlighted table; three-piece fingered back gauge; that can be tilted; double end flywheel suspension not affected by machine setting or floor sag; and crossbraced tables. An extra



MURCO ROLL HEADERS are made in sizes to handle 24 to 72-inch diameter rolls in lengths up to 200 inches. Rollers are made of solid aluminum or wood. The valve may be operated from any position. Heavy frame construction is said to require no maintenance. D. J. Murray Mfg. Co., Wausau, Wis.

long 77-inch extended rear table is available as optional equipment on the 55-inch and larger trimmers. The Lawson Co., 2011 Hastings Street, Chicago 8, Ill.

Wrapper Seals With Heat, Glue or Tape

The Corley-Miller model MPS wrapping machine wraps packages with cellophane waxed papers, kraft

papers and other common wrapping materials from rolls or cut-to-size sheets. It heat seals, it can be furnished with a gluing mechanism to seal wrappers with cold glue; or it applies pressure-sensitive tape, inserting a tear-tab at the same time.

The MPS Wrapper has a productive capacity up to 21 packages per minute. Packages may be 2½ to 15 inches long, 1 to 9 inches wide, and a ½ to 5 inches high. Special accessories available for larger or smaller packages. The machine requires a floor area 4 by 8 feet while in operation.

Mounted on its own casters, the MPS Wrapper can be plugged into any wall outlet. Power is supplied by a ¼ h.p. single phase motor and consumes 1000 watts at full load. Accessories available include: Banding attachment, electric eye to automatically regulate the cutting of printed wrappers from rolls; and automatic labeller and label imprinter. Miller Wrapping & Sealing Machine Co., 18 So. Clinton St., Chicago 6, Ill.

Cutters With Engineered Hydraulic Clamps

Three Regent automatic Clamp Paper Cutters (34½-inch, 42-inch and 52-inch) offer 42 stroke-a-minute knife speed, with right-to-left action. Clamp openings range from 4½-inches on the 34½-inch cutter through 6-inches on the 52-incher.

The clamps are fully hydraulic with an engineered clamp lead to assure that excess air is fully removed from the lift before the knife starts to cut. Clamp pressure can be adjusted from the front of the machine. Thus the paper is held throughout the cutting cycle to prevent offsetting or excessive marring of the top sheets. The clamp can be actuated by a foot treadle to facilitate gauging the cuts or to take the swell from loose or bulky signature.

Other features of the line of cutters include: two-hand operation; three-piece fingered back gauge; photo-electric safety beam; all controls on front of cutter; leak-proof hydraulic tank cast in base; micrometer handwheel adjustment; and magnified back gauge scale. Spacer operation, with an accuracy said to be within .004-inches, is optional. The Lawson Co., 2011 Hastings Street, Chicago 8, Ill.

Slot Closing Device Feature of Trimmers

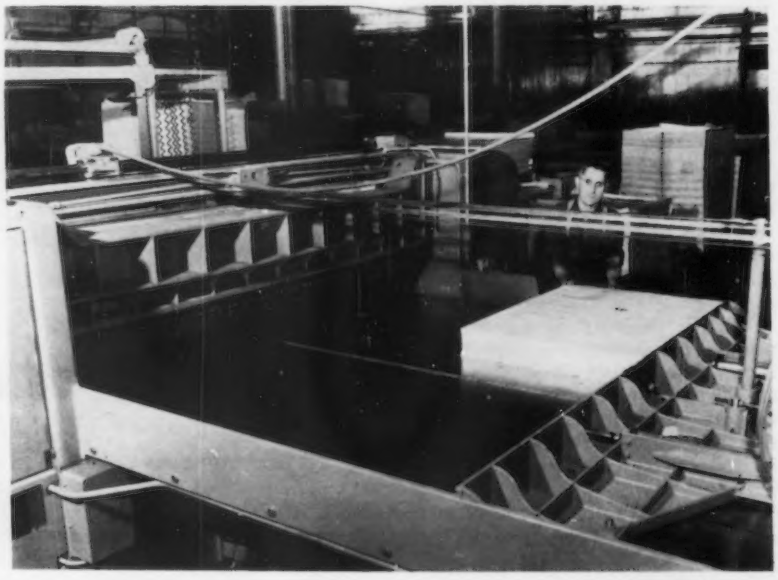
Shown in operation is the 100-inch Seybold Full Hydraulic mill trimmer. A particular feature of this line of mill trimmers is a closing device built into the rear table to close the slot in which the back gauge travels. Consisting of nylon chain connected to the back gauge guide, it fills the slot as the back gauge moves backward. This permits back loading of the trimmer without the use of a metal or cardboard sheet under the lead edge. It also facilitates swinging of the paper pile without slot interference. Air or mechanical rams can side load the back table automatically.

The slot closing device is standard on all Seybold 65-85-100 inch Full Hydraulic cutter trimmers. These trimmers are also equipped with Seybold air film tables. Patented air jets, imbedded in the table, create a cushion of air on which lifts of stock "float". Thus heavy piles can be jogged easily against the side and back gauges. Operator fatigue is thus said to be reduced.

Automatic bar indexing can be provided by the Auto-Spacer which has a six-sided spacer bar with removable strips. Cut sequences are memorized so that the back gauge moves into position automatically. Minimum trim cut is 1/32 inch, maximum is ⅝ inch.

Full, preselected clamp pressure is applied well ahead of the knife, and maintained throughout the entire cutting cycle. Clamp pressure can be varied from the weight of the clamp itself to a full pressure of 8 tons. Although the pre-clamping operation is automatic, the pile can be preclamped by means of the foot treadle to allow operator visual gauging ahead of the cut.

Seybold's Z-action knife—double end pull, double shear—with the correct angle for maximum knife and machine life, is always pulling, not pushing, the knife through the pile. Other features provide: two-hand starting mechanism in which both control bars must be turned and held until knife reaches the cutting stroke; mechanical safety latches which secure the clamp and knife at the top of each stroke. Hydraulic locking action backs up mechanical latches. Treadle which, even if stepped on accidently cannot actuate clamp until lower of



two starting bars is turned to unlatch clamp.

Electric interlocks prevents Auto-Spacer from operating if operator actuates control fingers while setting cut and trim stops. Back gauge cannot move forward while clamp is down nor can cut be made while back gauge is moving forward. Two buttons are located on either side of the hand wheel to stop clamp, knife and back gauge simultaneously should an emergency arise. Harris-Seybold Co. 4510 East 71st St., Cleveland, 5, Ohio.

Hole, Bump Detectors Scan Entire of Sheet

While the sheet is travelling up to 2,000 f.p.m., the Curtiss-Wright Bump Detector will detect defects such as slime spots, coating lumps, cuts, wrinkles, folds, etc. which cause protrusions of as little as 0.0001 inches from the surface of the paper; and the Void Detector will detect holes as small as 0.010 inches in diameter. Both devices inspect the entire width of the running sheet 100 per cent of the time.

No special training or operating procedures are required because operation of both devices is completely automatic. The patented sensing mechanisms exert a pressure of about 4 grams per 6 inches of length of paper. Detector operation is not affected by variations of moisture or temperature, or in the stock, or by changes in sheet thickness.

The Void Detector's sensing head consists of the appropriate number 6 inch wide metal brushes mounted so as to contact the upper surface of the sheet as it is passing over a grounded metal roll. The detector works on the principle of time-rate of contact. The brushes, the sheet, and the grounded roll serve as a switch.

When a void appears, some of the bristles touch the grounded roll. At this point an electric pulse is developed, the time-base of which is proportional to the diameter of the hole. An internal calibrator is pre-set for the minimum hole diameter that should be rejected. Any hole which is equal to or greater than the calibrated setting is rejected.

The Bump Detector's sensing head consists of 6 inch wide curved stainless steel skids mounted so as to contact the upper surface of the sheet as it is passing over a metal roll. This detector utilizes the velocity displacement principle. Each skid terminates in a sensitive accelerometer. When the sheet is free of protrusions, the accelerometer has an almost constant output. When protrusions occur the skid is suddenly displaced and the accelerometer produces a voltage proportional to the displacement.

For both detectors, crayon markers, imperfection counters and alarm systems are available. In the event of a break during operation, sensing heads are automatically lifted from the paper by means of pneumatic valves, and when the sheet is running properly again, the heads drop into position automatically. The Detectors' amplifiers are housed in a control box which can be wall or panel mounted. Designed for ease of maintenance, the control unit panel board is equipped with a red light and/or a bell which activate when any amplifier within the unit malfunctions. To facilitate servicing, each amplifier is designed as a separate plug-in and each instrument is supplied with a built-in spare amplifier.

Power input required is 110 volts a.c. 60 cycle, single phase; air is supplied at 40 p.s.i. Curtiss-Wright Corp., Princeton Div., Industrial Controls Dept., P.O. Box 110, Princeton, N. J.

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Oct. 22	Oct. 29	Nov. 5	Nov. 12	Nov. 19
1960	94.5r	95.7r	91.7r	96.8r	89.1
	Oct. 24	**Oct. 31**	**Nov. 7**	**Nov. 14**	**Nov. 21**
1959	96.3	97.8	94.6	96.5	96.3

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	96.5	97.7	98.1	96.9	97.6	96.1	81.2	91.7	89.1‡	94.6‡	—	—	—
1959	87.8	90.5	93.2	94.4	95.5	95.6	84.5	96.0	92.4	97.4	96.2	86.6	92.2

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1953	1954	1955	1956	1957	1958	1959	1960
Year to Date	94.2	92.0	96.4	98.5	91.3	87.3	92.8	93.9
Year Average	92.3	91.6	96.2	97.9	90.4	87.0	92.2	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Oct. 22	Oct. 29	Nov. 5	Nov. 12	Nov. 19
1960	93	91	88	92	89
	Oct. 24	**Oct. 31**	**Nov. 7**	**Nov. 14**	**Nov. 21**
1959	94	96	94	95	95

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	92	95	94	92	94	92	78	93	87	93	—	—	—
1959	89	94	95	94	96	96	83	97	92	96	94	80	92

‡Preliminary.

† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	WEEK ENDING Nov. 19, 1960	WEEK ENDING Nov. 12, 1960	CUMULATIVE TO DATE Jan. 1, 1960 to Nov. 19, 1960
% Activity	89%	92%	91%
Total	309,245	325,226	14,256,721
Containerboard—Domestic Use	158,838	167,044	7,367,193
Liner	109,795	110,482	4,942,964
Corrugating Material	45,238	51,885	2,192,879
Chip & Filler Board	3,805	4,677	231,350
Boxboard—Domestic Use	92,434	98,101	4,378,843
Folding	56,801	57,813	2,625,237
Set-Up	10,283	9,637	498,147
Special Food Board	25,350	30,651	1,255,459
Other Paperboard	57,973	60,081	2,510,685
Containerboard Type	26,790	30,884	1,201,021
Boxboard Type	31,183	29,197	1,309,664
Total Orders			
Received	283,461	272,216	
Unfilled End of Week	393,601	415,674	

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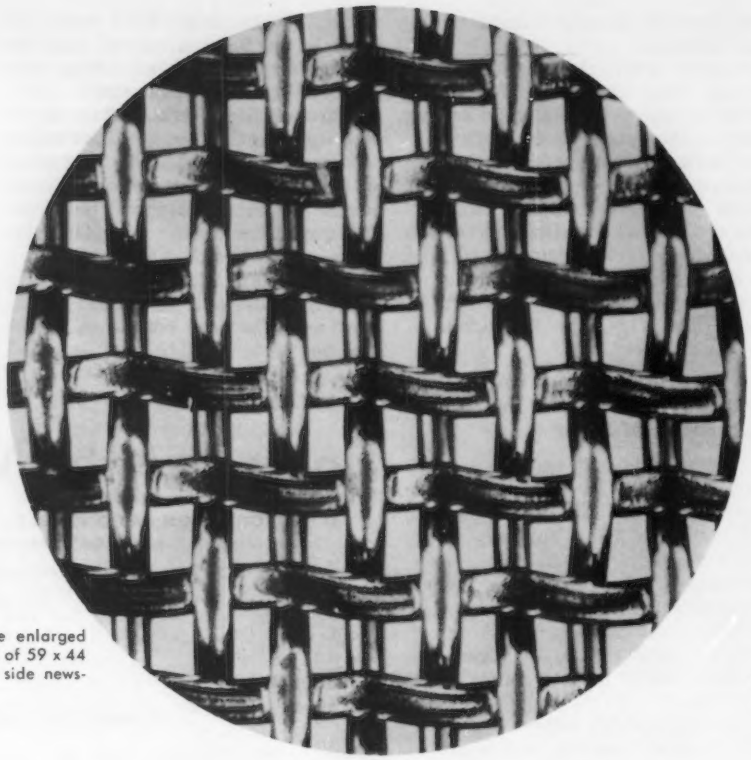

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Paperboard Economic Prospects — Very Good for 1961

An optimistic forecast on the outlook for paperboard demand. Prospects for basic grades of board are discussed in some detail.

The paperboard industry was described as one of the bright spots in the economy and is forecast to have a gradual pickup for the remainder of the year and then an accelerated rise in 1961. This forecast was made by Peter W. Hoguet, president of The Econometric Institute at the 28th Annual Meeting of the National Paperboard Ass'n. in the Waldorf-Astoria, November 16.

Mr. Hoguet said that the total paperboard industry had had a remarkable position throughout the year 1960 and that the average weekly tonnage had been equal to that of the record levels of 1959. In 1959 the average weekly production was 308,816 tons and this year the average weekly production has been 308,827. This covers a comparison of the first 45 weeks of 1960, up to November 12, with that of 1959.

Mr. Hoguet forecast that the pattern of production in the months ahead would show a two per cent gain in the fourth quarter of 1960 over 1959 and a six per cent gain in the first quarter of 1961 over 1960 and a nine per cent gain in the second quarter of 1961 over 1960 and a further seven per cent gain in the third quarter of 1961 over 1960. This forecast for a higher level of production for paperboard was based on an anticipated upturn in the economy. Mr. Hoguet said that the third quarter will prove to be the low point in the current slowdown in the economy. He said the signal for the upturn in the economy was revealed in the recent figures released by the Department of Commerce on October 28 on new orders for durable and nondurable manufactures. This bullish development showed that new orders in manufacturing had turned up for two months in succession.

Backlogs also increased for the first time since last winter. Manufacturers' new orders for durables were at a seasonally adjusted annual rate of $166.1 billion in July, $172.9 billion in August and $176.2 billion in September. The September increase brought new orders over the level of manufacturers' sales, which were at $172.2 billion in September.

Manufacturers' new orders for non-durables were $184.2 billion in July, $187.3 billion in August and $188.2 billion in September. Here again, the rise in new orders turned up just beyond the level of manufacturers' sales, which in September were $187.1 billion.

The pickup in new orders and sales is much more marked in the case of consumer durables than in consumer non-durables. In 1960 the production of consumer durables, as measured by the Federal Reserve Board index with 1957 equaling 100, dropped to 112.9 in the third quarter from a high of 119.3 in 1960. With sales and new orders picking up, reflecting the higher level of the consumer's purchasing power, production of durables is expected to turn around and reach an estimated index level of 116 in the fourth quarter of 1960. This figure is about equal to the average level for 1960 and represents a gain of 8.4 per cent over the 1959 level. Consumer expenditures on durables, which had a very small gain in 1960, will have a considerable gain of an estimated 10.3 per cent in 1961.

Another factor, pointed out by Mr. Hoguet, which will be affecting production over the coming months is a rise in the position of retail trade. Retail sales rose in October. Sales of non-durable goods turned around in October. By the third quarter of 1960 the production of non-durables had reached an index level of 117.4. It is expected to average 116 for 1960 as a whole and this will be 4 per cent above the 1959 level.

He said that for the remainder of 1960 it is reasonable to expect a continuation of the current upward trend in retail sales. The consumer will be affected by the action of the Federal Reserve which on October 26 expanded the lending power of the banks. At that time vault cash and reserve requirements of member banks were lowered in a move to meet Thanksgiving-Christmas credit needs. He noted that the consumer has enjoyed a steadily improving position in 1960. His potential buying power has increased and disposable income is estimated to have gained 5.2 per cent in 1960 over 1959. Real disposable income, after allowing for price increases, is expected to gain 4.4 per cent in 1960. Following the pattern of the Institute's forecast, the consumer is expected to enjoy further gains in 1961. Real disposable income is forecast at $294.4 billion in 1961, some 4.8 per cent above the 1960 level.

Another factor which Mr. Hoguet said would be contributing toward a turnaround in the economy and putting a disclaimer on the possibility of a recession was the low level of inventories now existing for most segments of industry. He said the easing of interest rates was equally as important but the newest factor in addition to the higher level of new orders in manufacturing was the restoration of public confidence in business following the narrow margin of the vote which left a large bloc of conservatives in the House and Senate. Congress could now be controlled by conservative Southern Democrats who can combine with Northern Republicans to give the country a moderate program. He pointed out that also during the campaign President-Elect Kennedy had clarified his stand on dollar stability and promised not to devalue the dol-

"Mild decline of the second and third quarter is near an end. We are on a rebound in the economy and a recession is certainly not in sight."

lar and also promised to encourage better tax depreciation laws to raise productivity of industry.

He said for these reasons the mild decline of the second and third quarters is near an end. We are on a rebound in the economy and a recession is certainly not in sight. The upturn of new orders is putting a disclaimer on the idea of a recession and removes the possibility of a dramatic background of crisis similar to that of the early days of the Roosevelt Administration, when new social and economic programs could get public and Congressional endorsement. If party labels are forgotten and the Southern votes for Kennedy are added to the strength displayed by Nixon, the actual winners of the election are the conservatives and the election is not likely to reshape the business curve, at least from now through 1961. Certainly the American people did not elect a labor government and they expect their President to be bigger than and independent of the university intellectuals or the labor leaders or any other organized segment of society. Unity and full support of the people will be a most important part of any program to move ahead.

Mr. Hoguet said total industrial production as measured by the Federal Reserve Board index with 1957 = 100 stood at the level of 108.3 in the third quarter of 1960. This was three per cent above the year-earlier level. He said the Institute forecast production would edge up close to the index level of 110 in the current quarter and would average 109 for 1960 as a whole, 4 per cent above the 1959 level.

Further increases in industrial production, in line with the Institute's over-all forecast for increased economic activity, are expected for 1961. Thus, the Institute forecast indicates the index will reach the level of 113 in the first quarter of the year, climbing to 115 in the second quarter and 118 in the third quarter of 1961. This will be 9 per cent above the third quarter of 1960, which is considered the low point of the present dip in the economy.

Containerboard

In the first quarter of 1960 production of containerboard averaged 160.8 thousand tons, seasonally adjusted weekly rate. This was seven per cent above the year-earlier level. In the second quarter of the year production eased to a seasonally adjusted weekly rate of 157.9 thousand tons, 3 per cent below the year-earlier level. In the third quarter of 1960 production rose to a seasonally adjusted weekly rate of 159.7 thousand tons which was the same as the year-earlier output. During the first two quarters of 1960 production of containerboard ran below the demand criterion while in the third quarter production was very slightly above demand. During the first three quarters of 1960 as a whole production was three per cent above the corresponding period in 1959.

The containerboard end-use index averaged at 107 in 1959 (1957 = 100). It rose to 112 in the first and second quarters of 1960 dropping to 110 in the third quarter of the year. In the current quarter the index is expected to climb back to 112 and to average slightly below 112 for 1960 as a whole. In 1961, in accordance with our forecasts for industrial production, the containerboard end-use index is expected to reach the level of 115 in the first quarter, 117 in the second quarter and 119 in the third quarter of the year.

On the basis of this index, demand for containerboard is forecast at a seasonably adjusted weekly average of 162.1 thousand tons in the current quarter, three per cent above the year-earlier output. In the first quarter of 1961 demand will climb to a seasonally adjusted weekly average of 168.0 thousand tons, four per cent above the year-earlier output. Demand is forecast at a seasonally adjusted weekly average of 171.0 thousand tons in the second quarter of the year, 8 per cent above the low year-earlier output, and at 173.8 thousand tons in the third quarter of 1961, nine per cent above the year-earlier output.

Folding Boxboard

Production of folding boxboard reached a weekly average of 56.1 thousand tons, seasonally adjusted, in the first quarter of 1960. This was 5 per cent above the year-earlier output. Production climbed to a seasonally adjusted weekly average of 58.7 thousand tons in the second quarter of the year, 3 per cent above the year-earlier level. A decline in production took place in the third quarter of the year when the average weekly rate was 55.0 thousand tons, 1 per cent above the year-earlier level.

The folding boxboard end-use index averaged at 111 in 1959 (1957 = 100.) In the first quarter of 1960 it climbed to 114, reaching 116 in the second quarter and 117 in the third quarter of the year. In the current quarter the index is expected to continue at 117 averaging at 116 for 1960 as a whole. Further gains are forecast in 1961 with the index at 118 in the first quarter, 120 in the second and 121 in the third quarter of the year.

Demand for folding boxboard is forecast at a seasonally adjusted weekly average of 58.9 thousand tons in the current quarter, four per cent above the year-earlier output. It is then likely to climb to 59.7 thousand tons in the first quarter of 1961, six per cent above year-earlier production. Demand will average 60.7 thousand tons a week in the second quarter of 1961, which will be three per cent above the year-earlier output, and will climb to a seasonally adjusted weekly average of 61.2 thousand tons in the third quarter of 1961, 11 per cent above the low year-earlier production.

Following gains predicted for board: Fourth quarter 2% over 1959, and first and second quarters of 1961 against same periods in 1960 up 6% and 9%.

Set-Up Boxboard

Production of set-up boxboard averaged 11.1 thousand tons, seasonally adjusted weekly rate, in the first quarter of 1960. This was one per cent below the year-earlier level. Production averaged 11.2 thousand tons a week in the second quarter, four per cent below the year-earlier output. In the third quarter of 1960 production declined to a seasonally adjusted weekly average of 10.7 thousand tons which was 12 per cent below the year-earlier production.

Demand for set-up boxboard is forecast at a weekly average of 11.9 thousand tons, seasonally adjusted, in the current quarter.

Demand is expected to average at 11.9 thousand tons a week in the first quarter of 1961, less than one per cent above the year-earlier output. In the first quarter of 1961 demand is forecast at a seasonally adjusted weekly average of 11.8 thousand tons, six per cent above the year-earlier production. In the second quarter of 1961 demand will edge up slightly to a weekly average of 12.0 thousand tons, seven per cent above the year-earlier level, reaching a weekly average of 12.1 thousand

tons in the third quarter of the year, 13 per cent above the low year-earlier output.

In the forecast of demand it is assumed that there will be some continuation of loss of competitive position in 1961. However, the turn of manufacturers' new orders above the level of sales of non-durables in the last two months and the upturn in retail sales will be factors contributing to our forecast of higher demand for set-up boxboard. As we have previously said, the decline of the second and third quarters is near an end, and we are currently on a gradual rebound. Sales of semi-durables which are packaged in set-up boxboard will be at higher levels in this upturn.

Special Food Board

Production of special food board averaged 27.3 thousand tons a week, seasonally adjusted, in the first quarter of 1960. This was two per cent above the year-earlier level. In the second quarter of 1960 production eased to a seasonally adjusted weekly average of 24.4 thousand tons, three per cent below the year-earlier level. In the third quarter of the year production averaged 26.6 thousand tons a week, two per cent below the year-earlier level. During the first three quarters of 1960 as a whole production of special food board averaged one per cent below the output in the corresponding period in 1959.

Special food board end-use index averaged 108 (1957 = 100) in 1959. It rose to 110 in the first quarter of 1960, 112 in the second and 113 in the third quarter of the year. A further steady increase in end-use activity is expected. In the current quarter the index is forecast at 114 and will thus average 112 for 1960 as a whole. In the first quarter of 1961 the index will rise to 115, reaching 116 in the second quarter and 117 in the third quarter of 1961.

Demand for special food board is expected to average 29.8 thousand tons a week, seasonally adjusted, in the current quarter. This is four per cent above the year-earlier output.

Demand is forecast at 30.7 thousand tons a week in the first quarter of 1961, 12 per cent above year-earlier production, rising to 31.0 thousand tons a week in the second quarter of the year, 17 per cent above the low year-earlier output. In the third quarter of 1961 demand for special food board is forecast at a seasonally adjusted weekly average of 31.3 thousand tons, 18 per cent above year-earlier production.

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What Is New in the Design Of Groundwood Mills?

New patterns and ideas in groundwood mill design and equipment are reviewed. This veteran consulting engineer has been involved in the design of many new pulp and paper mills in all areas of this continent.

A. P. Schnyder,
The Lummus Co.

Groundwood pulp is the lowest cost of all the paper pulps, the wood being converted into fiber without shrinkage except for losses through screening. The development of the Waterous Great Northern two-pocket grinder in the 1930's set the date for the modern groundwood mill. At that time still another new type grinder, the Roberts ring-type, which fits into the pattern of the modern groundwood mill came on the market. Either type is installed in a one- or two-story building. The day's storage of log supply is outdoors or in a building annex.

► *Mr. Schnyder has agreed with me that low head grinders (Great Northern or ring grinders) require a separate wood storage area for one or two shifts in order to avoid running the woodroom three shifts a day. This means that labor must be provided to supply logs to the conveyor or flume feeding the grinder plus labor to actually feed the wood into the grinder. With the magazine grinder wood is not only stored in the high magazines but also on adjacent floor area so that the grinder feeder need only slide the logs into the magazine as required.*

The new groundwood mill construction made a sharp break with practice prevailing for some 15 years while the Canadian newsprint mills came into being. Grinders with high loading magazines or chain type, continuous feed type with generous log feed capacity were the standard for a number of years, requiring a 3½ story building having a complex crane arrangement.

Despite the prevalent practice in Canada using a sizable charging floor above the grinder room proper, I think that this is an ungainly type of installation on account of the difficult crane arrangement. However, a short magazine can readily be superimposed on a Great Northern type grinder, thereby permitting loading off a parallel conveyor directly adjacent to the grinders with the storage bin in some convenient remote area. The Voith chain type grinder can also be loaded sideways from a similar conveyor arrangement. In short, I think it is essential to have a common crane serving the entire line of grinders rather than a series of transfer cranes necessary in the usual Canadian practice.

Controversy is the lifeblood of journalism! The editor, who had many years of experience in groundwood mills, and who has followed recent developments, ventures to differ on some points with our expert. He has taken the liberty of interjecting his comments, which he has discussed with Mr. Schnyder, in italics throughout the article.

► *In Canada where modern groundwood mill design was pioneered they have stuck with the magazine grinder. In the post World War II period the only exceptions to this have been: on the West Coast where reservations have been held about the behavior in long magazines of the cants cut from their large logs; and in the east where old three pocket grinders were being replaced and where going to a much higher building structure presented problems. Otherwise in Canada all the new or expanded groundwood mills have used the magazine type grinder. As an example when Great Lakes Paper Co. decided to replace all their three-pocket grinders within an existing building they installed Waterous G.N. grinders but later when further expansion required a new groundwood mill they went to magazine grinders. The trend in Europe has been similar to Canada. When Bowaters decided to install a large groundwood mill at Port Ellsmere, they used magazine grinders. (This, the first post war groundwood mill in England, will be the subject of a feature article in* PAPER TRADE JOURNAL.) *Similarly in Scandinavia most new groundwood mills use magazine grinders.*

Most interesting is Crown-Zellerbach's new Francisville, La., mill, where delta hardwoods are ground for a highly coated magazine sheet.

Groundwood mills consist of several subdivisions:

a. Log conveying, storage of barked logs for ready use and special feed conveyor for loading the grinder proper.

b. Grinder rooms with line shaft and drive motor, load and temperature controls, and ventilation.

c. Coarse or bull screens, reject refining, rifflers or centrifugal cleaners, fine screens—primary and secondary.

d. Deckers and stock storage chests.

Selection of Grinders

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erts ring-type, both using pulpwood sticks of either 48-52 inches or 63-66 inches in length, 4-20 inches in diameter. The Great Northern type operates on an on-off loading cycle, whereas the Roberts loading is continuous. The working surface of the grindstone is comparatively greater for the G.N. type. The Roberts grinder requires straight wood, whereas the G.N. type can accept a limited degree of irregularity.

The Great Northern design evolved from the earlier two-pocket high magazine type. It produces the least amount of slivers, thanks to the positive action of the loading pistons. Its foot engages the stick with a positive pressure and prevents rolling. The grinder has a very short hopper. The sticks are transferred manually from the adjacent steel apron conveyor into the hopper. The log count is the sole measure of feeding rate.

► *But a number of mills have recently installed ring grinders. Notably the new Crown-Zellerbach mill at St. Francisville, mentioned above by Mr. Schnyder.*

Stone dressing mechanism and stone showers are comparable for both types. Building volume and operating floor space are approximately the same. The Roberts grinder operates with a fairly constant load which facilitates adjustments for load control and, thereby, reaches back into the operation of the generating plant.

The grinder performance is fundamentally affected by the stone characteristics and the pressure forcing upon the stick against the stone. At this time, some mills operate with half the pressure accepting one-half the production per stone per day as compared to the full measure by the others. This contradictory practice escapes a clear cut decision. Speculatively, the lower pressure operation should provide for greater freedom of adjustment and incidental improvement in quality.

Feeding Wood to Grinders

Both types of grinders depend on a conveyor system which delivers the sticks in a "parallel position" to permit the transfer end-wise from the conveyor into the feed pocket or feed opening to the grinder. The conveyor in northern practice is often a flume with the sticks floating cross-wise. The flume is fed at one end at the rate to keep it uniformly loaded from one end to the other. In the southern practice, steel apron conveyors are being used. At the time of the construction of the first southern mill, the general assumption prevailed that southern pine would not float. This prompted the selection of the apron conveyor which has been accepted as a standard method of conveying in the three southern newsprint mills, which followed the first one at Lufkin, Tex.

Based on the recent experience in wood handling, pine will float as well as spruce and other northern conifers. For that reason flumes would be equally acceptable with the apron conveyors. The latter are neater and maintenance should be less and expected life longer.

Automatic Feeding of Grinders

Automatic feeding is common with Roberts grinders. The log is fed sideways into the ring magazine. The feed opening is relatively large. Each stick is transferred end-wise off the apron-type conveyor by means of a solenoid operated pusher. The feed opening is sufficiently large to compensate for average irregularities in direction of feeding and size of sticks.

The Great Northern grinder in contrast is being fed manually despite the fact that this operation could readily be mechanized.

► *We know of at least one completely automatic system for feeding wood into a Waterous G.N. grinder. This is at the mill of MacMillan Bloedel and Powell River Co. in Powell River, B.C. (See* PAPER TRADE JOURNAL, *Nov. 18, 1957 for detailed article.)*

Bull Screens

The modern type of screen for this service is a vibrating screen. Such types as Jonsson, Impco., Allis Chalmers low head, and a most interesting one of which 16 units are in operation at the pioneer southern mill of Lufkin, Tex., all perform acceptably. The Southland screen deserves special attention. It represents an original J. M. Voith design now being made in this country by Lufkin Machine and Foundry Co. Its moving parts are shop fabricated to fit the masonry construction necessary to complete the screen components.

The first installation of this screen started operation in 1940. Its performance was sufficiently impressive that during the three successive expansions of the mill this type was duplicated in preference to more recently developed vibrating screens.

Following bull screening is sand or grit removal which for a good many years was done with rifflers. The most recent mills use centrifugal cleaners, though the rifflers have given acceptable account of themselves in cleaning efficiency as well as maintenance and power consumption.

Fine Screen System

Primary screening with centrifugal screens is common to all pulp screening. The primary fine screens are followed by a secondary screening system with the tailings from the latter being either sewered or diverted for supply to a coarser product.

► *I feel that the author should have mentioned the great improvements made in centrifugal design by the Cowan brothers toward the close of World War II and which have resulted in great improvements in all centrifugal screens. Newer and extremely interesting is the use of pressurized screening for groundwood as well as chemical pulps.*

Rejects Refining System

The groundwood mill rejects originate at the bull screens, being predominantly slivers due to relative incompleteness of grinder operation. These rejects represent long irregular size matchstick-like collection of wood slivers some as long as the pulpwood stick itself. During earlier practice these rejects were chopped up and fed to a waste wood burner. Today they are being processed in a hammermill to relatively smaller particles and finally refined in a disk refiner for return to the acceptable process flow.

Use of Centrifugal Cleaners

The current operating experience does not indicate that centrifugal cleaners are mandatory. Rifflers, a very old proven practice, are performing equally well, require comparatively insignificant maintenance, consume a small amount of power; in short, they are uniquely practical if installed in accordance with long established experience factors. The handicap of the rifflers compared to centrifugal screeners is the greater building space required.

► *For a groundwood mill of any size, and they are usually relatively large, a very large floor space would be required for rifflers and the building design would have to allow for the*

(Continued on page 68)

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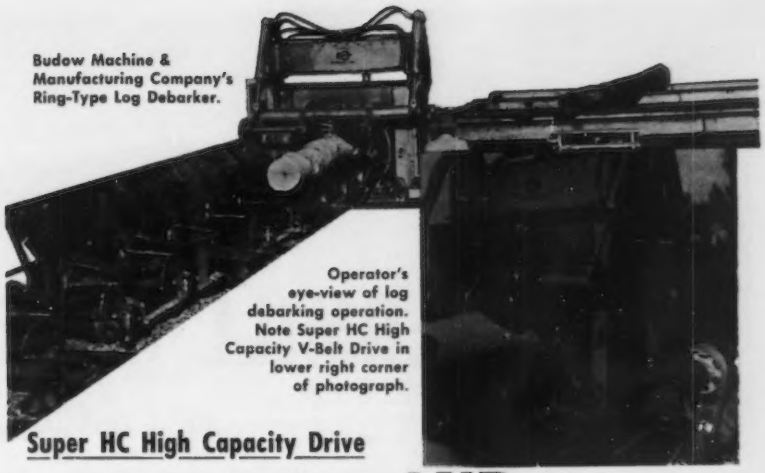

Budow Machine & Manufacturing Company's Ring-Type Log Debarker.

Operator's eye-view of log debarking operation. Note Super HC High Capacity V-Belt Drive in lower right corner of photograph.

Super HC High Capacity Drive

proved practical AND profitable ...$227 saved on each machine!

The Budow Machine & Manufacturing Company, Birmingham, Ala., had a problem on its Ring-Type Log Debarker: conventional drives were so big, they interfered with the operator's view of the debarking process.

In the words of the company's vice president, T. P. Bush, Jr., "Our most important single problem was eliminating the obstruction to the operator's line of vision."

Redesign of the drive, using Gates Super HC High Capacity V-Belts and Sheaves, not only solved the problem, but produced unexpected 'dividends' as well.

"This solution proved to be not only practical but profitable too," says Mr. Bush — and savings of $227 on each debarker drive certainly back up that assertion.

Here's how the savings were realized: First, each Super HC High Capacity Drive cost $34.55 less than conventional drive; second, Super HC made possible the use of a smaller, higher-rpm motor costing $193 less than the motor previously used.

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You can realize savings on drives that are part of your own equipment — either equipment you own and operate in your mill or shop, or equipment you manufacture for sale. Gates Offices and Gates Distributors are located in all major industrial centers. Ask for booklet: *The Modern Way to Design Multiple V-Belt Drives.*

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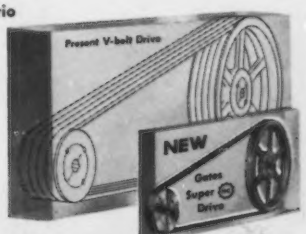

Gates Super HC V-Belt Drives same hp capacity in smaller "package"

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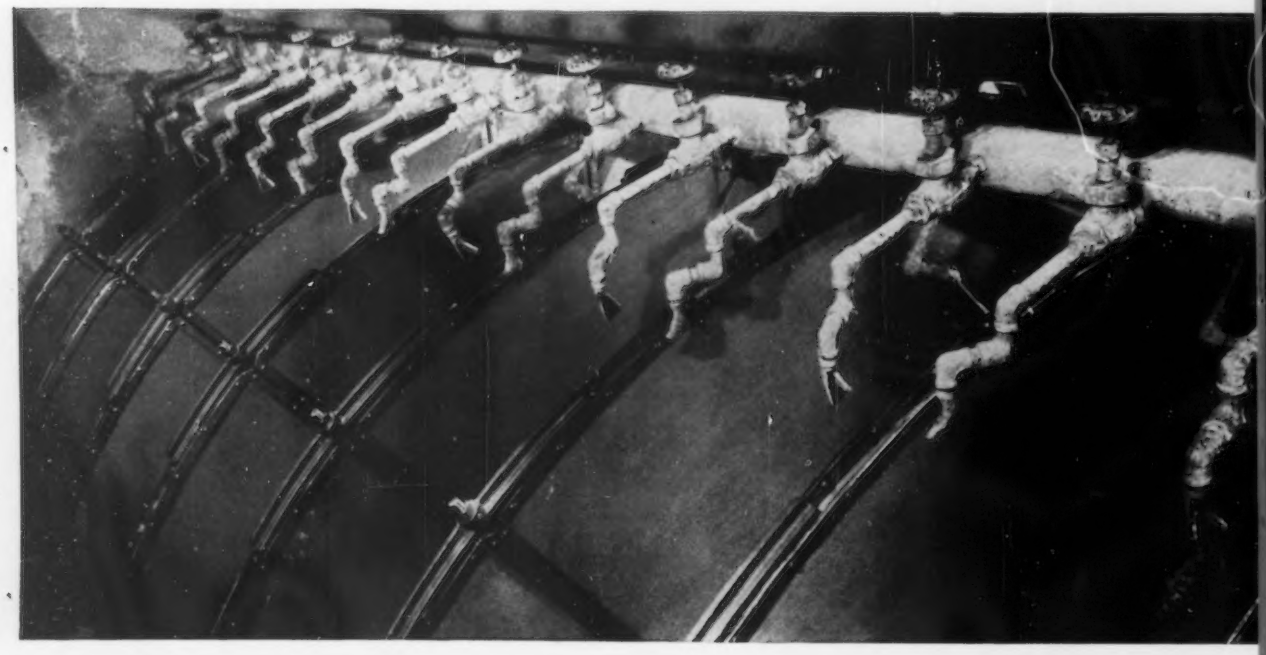
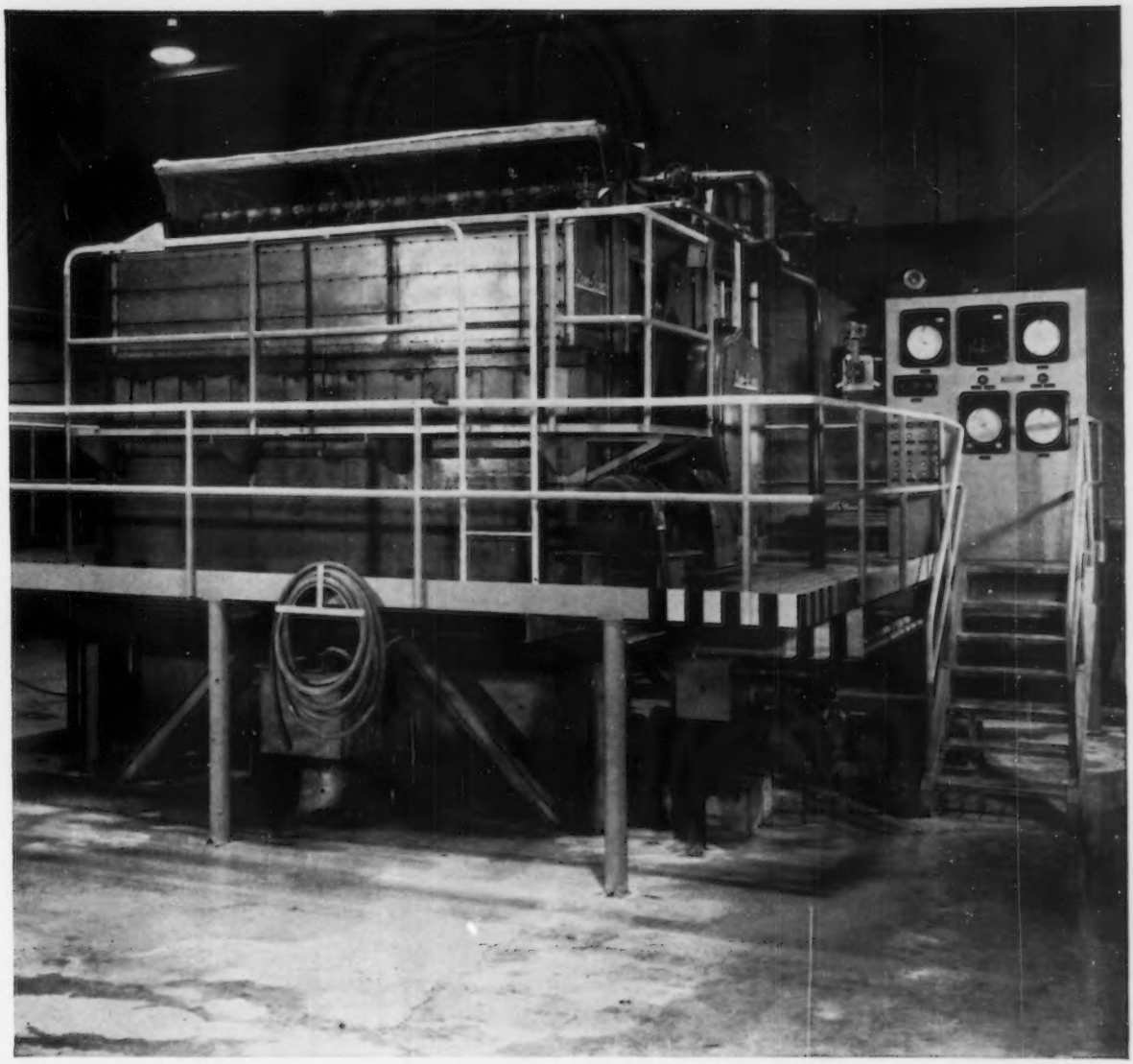
Another example of the paper industry's wide acceptance of the American disc-type Saveall for maximum recovery of fiber from white water is seen in this installation at the well-known Hammermill Paper Company's Erie, Pennsylvania, Division.

The equipment handles white water from Hammermill's No. 7 machine, producing various grades of papers including Hammermill Bond and Hammermill Offset. Maximum flow is 1,200 g.p.m. Effluent ranges from 0.0 to 0.25 lb. per 1,000 gallons, showing the high rate of recovery achieved.

As well as excellent performance, the American Saveall offers the advantage of small space requirements, easy and quick replacement of filter disc sectors and fully automatic, continuous operation. Two sizes are available—9 ft. dia., with a maximum of 16 discs having 1,790 sq. ft. filter area and occupying 28 ft. x 12 ft. floor space; and 7 ft. dia. with a maximum of 10 discs and 700 sq. ft. filter area, requiring 9 ft. x 17 ft. floor space. For more information, write for Bulletin 3306 to Dorr-Oliver Incorporated, Stamford, Connecticut.





▲ Installation at Hammermill illustrates compact design and small floor space requirements of American Saveall.

◀ Close-up shows easily removable disc sectors and new "less splash" sluicing nozzles for continuous removal of recovered fibers, which are then returned to the stock chest.

DORR-OLIVER
WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT

. . . Groundwood Mills

(Continued from page 64)

equivalent of the weight of several feet of water over much of the floor space. We don't know of a single new pulp mill in North America in the last twenty years which included rifflers.

Measuring Wood to Grinders

The only practical method of measuring the wood directly to the grinders is the counting of the number of sticks, which depends on a representative average of its size. With the Great Northern grinder the sticks are counted visually by the operator feeding stick-for-stick. The Roberts grinder being fed mechanically is provided with an automatic counter.

High Capacity Grinders

It is the prevailing experience that the higher a production from a unit, the less uniform its product. After World War II when the demand for newsprint grew at a most precipitated rate, the newsprint industry found the answer by increasing production unit-wise from grinders. Grinders usually have overpowered drives. Taxing this drive capacity, they merely increased the pressure with which the wood was forced against the grindstone. The artificial stone construction permitted this increase of pressure. The result was that finally installations made 10 to 20 years earlier produced groundwood at twice the rate originally expected.

This apparent doubling of capacity was possible due to the flexibility of construction of artificial stones but mainly on account of the superior quality of the northern softwoods—spruce, hemlock, etc.

Nevertheless, the high production per grinder is at the expense of pulp quality. Current indications are that medium capacity grinding is to be preferred.

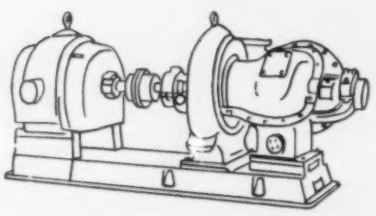
Deckering Method

Stock thickening is common to the entire pulp industry. Groundwood naturally has a lower freeness and, therefore, requires a greater surface. There seems to be a trend to return to the use of gravity type thickeners as opposed to vacuum filters.

Drive Power

The mechanical power supplied either through electric motors, water wheels or other methods is as important to the production of groundwood pulp as chemicals and steam are 1or the chemical pulp. Depending on the quality of pulp, the power requirements vary. For instance, for newsprint groundwood in the north, the power consumption for direct grinding is roughly 1000 k.w.h. per ton of pulp as compared to 1200-1500 k.w.h. on loblolly pine.

Electric motors of synchronous type at 240 to 257 r.p.m. are coupled to the shaft on which the stone is mounted. The prevailing motor capacity ranges from 1250 h.p. to as high as 9000 hp. This size introduces a special burden on the generating plant which can become a problem if the latter is of a limited size constructed integrally for the mill supply only. The bigger the capacity of the mill, the less sensitive the electric system is to the load changes resulting from the two-pocket grinder operations and occasional start-ups.



You'll get exceptionally low "first cost"
You'll use minimum power
You'll need less maintenance
with the
Kalamazoo "Side Hill" Washer

These practical slide washers give a better and more effective wash job than other washing methods. They may also be used as thickeners and savealls. These units are designed by Kalamazoo engineers — experts in serving the paper industry for more than 90 years. Our experience enables us to completely prefabricate the units of top quality materials. Installation supervision can be furnished.

Laboratory size units are available for experimental purposes in determining the proper angle and screen mesh.

Write today for information on capacities and cost estimates.

WOOD TANK DIVISION
Kalamazoo TANK & SILO CO.
1259 HARRISON ST.
KALAMAZOO, MICH.

'BUFFALO' – MOST COMPLETE LINE OF QUALITY HEATING, VENTILATING AND MAKEUP AIR UNITS

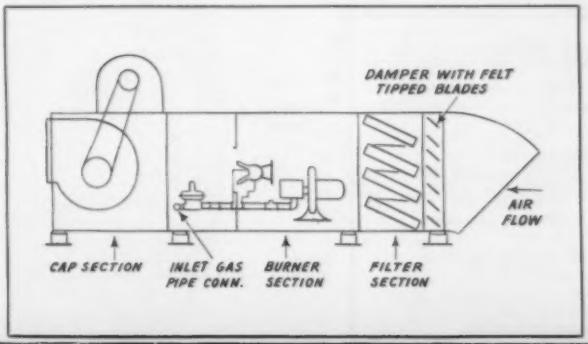
Whatever the air temperature requirements for your boiler room, turbine room or other plant areas, there's a 'Buffalo' Unit to give you permanent satisfaction. All embody the same quality engineering as the broad line of 'Buffalo' Mechanical Draft Fans.

For ventilation, you have 'Buffalo' Centrifugal, Propeller and Axial Flow Fans to choose from, depending on space, pressure and volume requirements. All are proven fans for specific design conditions, and may be used for supplying makeup air or exhausting.

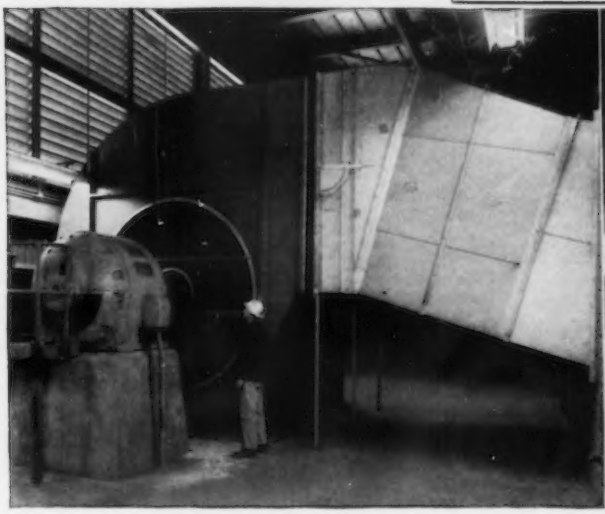
Sky Vent Power Roof Ventilators are efficient, weather-proof packages for economical installation without duct or floor space requirements. Available in 1,000 to 250, 000 cfm capacities, and can be arranged with heating coils and dampers for supplying makeup air.

New 'Buffalo' Direct Gas-Fired Makeup Air Units provide fresh, clean, tempered air without increasing boiler load. Units operate at virtually 100% thermal efficiency, with complete safety and freedom from attention. Can be built into Style H Sky Vent units. Also available with centrifugal blower head and accessories such as filters, dampers, etc.

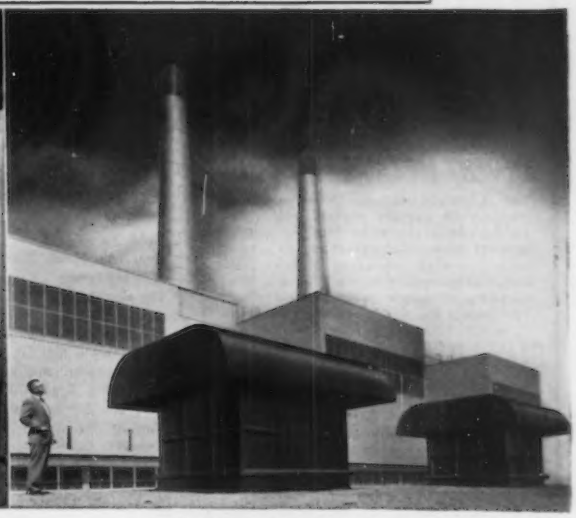
Write us about your heating, ventilating or makeup air problem—we'll give you details and recommendations promptly.



'Buffalo' Direct Gas-Fired Makeup Air Unit



'Buffalo' Type BL Ventilating Fan



'Buffalo' Power Roof Ventilators

"Buffalo"

BUFFALO FORGE COMPANY

Buffalo, New York

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

'Buffalo' Air Handling Equipment to move, heat, cool, dehumidify and clean air and other gases.

'Buffalo' Machine Tools to drill, punch, shear, bend, slit, notch and cope for production or plant maintenance.

'Buffalo' Centrifugal Pumps to handle most liquids and slurries under a variety of conditions.

Squier Machinery to process sugar cane, coffee and rice. Special processing machinery for chemicals.

AVAILABLE FOR PROMPT SHIPMENT

T.B.P.

(Tributyl Phosphate)

- *Tankcars*
- *Tanktrucks*
- *Drums*

IMPORTANT USES:

ANTI-FOAM AGENT

TBP is one of the most efficent chemicals for preventing undesirable foaming in—

THE
1. Manufacturing Process
2. Can Filling Operation
3. Final Application

OF
1. Synthetic Resin Emulsions (paints, etc.)
2. Paper Coating Compounds
3. Adhesives
4. Inks
5. Textile Sizings
6. Detergent Solutions
7. Many Other Systems

WITH
1. Low Cost (in one application as little as one-drop in a one-pint can before filling with a resin emulsion gave 20% more cans per minute than before.)
2. Practically no residual odor.

SOLVENT METAL EXTRACTION

TBP is widely used for the solvent extraction of certain metals and rare earths. At present, in this field, the largest use is associated with the atomic energy processes both in the initial preparation of the ores and the recovery of spent reactor fuels. Our TBP meets the AEC specifications.

OTHER USES

A high boiling solvent for most natural gums and synthetic resins for lithographic inks, etc. TBP is a recommended solvent with excellent blending power for preparing concentrates of 2-4D acid.

TBP is non-corrosive, non-flammable, with a pour point of $<-80°C$. and a vapor pressure of only 7.3 mm. Hg at 150°C. These properties suggest its use as a functional fluid for a variety of applications: such as a heat transfer medium.

MAY WE SUGGEST you also investigate KP-140 (tributoxyethyl phosphate) as an anti-foam agent.

FOOD MACHINERY AND CHEMICAL CORPORATION

Chemicals & Plastics Division

Prices of Fibers

MARKET WOOD PULP

FOURTH QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$82.50/ 90.00	§290.00/ —	§330.00/ —	§290.00/ —
Bleached Gw'd.	$ 97.50/100.00	$97.50/100.00			
Kraft, Blchd.	‡135.00/145.00	140.00/150.00			§157.50/ —
Kraft, Blchd. Hdwd.	135.00/140.00		140.00 —		
Kraft, Semi-bleached.	130.00/ —				
Kraft, Unbl.	117.50/125.00	125.00/ —	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	135.00/140.00	135.00/140.00	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	135.00/ —				
Sulphite, Unblchd.	130.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn.		140.00/ —	†134.00/ —		
Soda, Blchd.	130.00/135.00	130.00/135.00			

§ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances.
‡ Depending on Brightness.

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED NOVEMBER 22

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	$8.00/7.75	n.a.	n.a.	8.00/7.50
3	7.75/6.75	$7.50/7.25	$7.50/7.00	7.25/6.75
4	6.75/6.00	6.50/6.25	6.50/6.25	6.50/6.25
5	6.00/5.50	6.00/5.75	6.00/5.50	— /6.00
6	5.50/4.50	5.25/5.00	5.25/5.00	5.00/4.00
7	4.50/4.00	4.50/4.00	4.75/4.00	n.a.

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

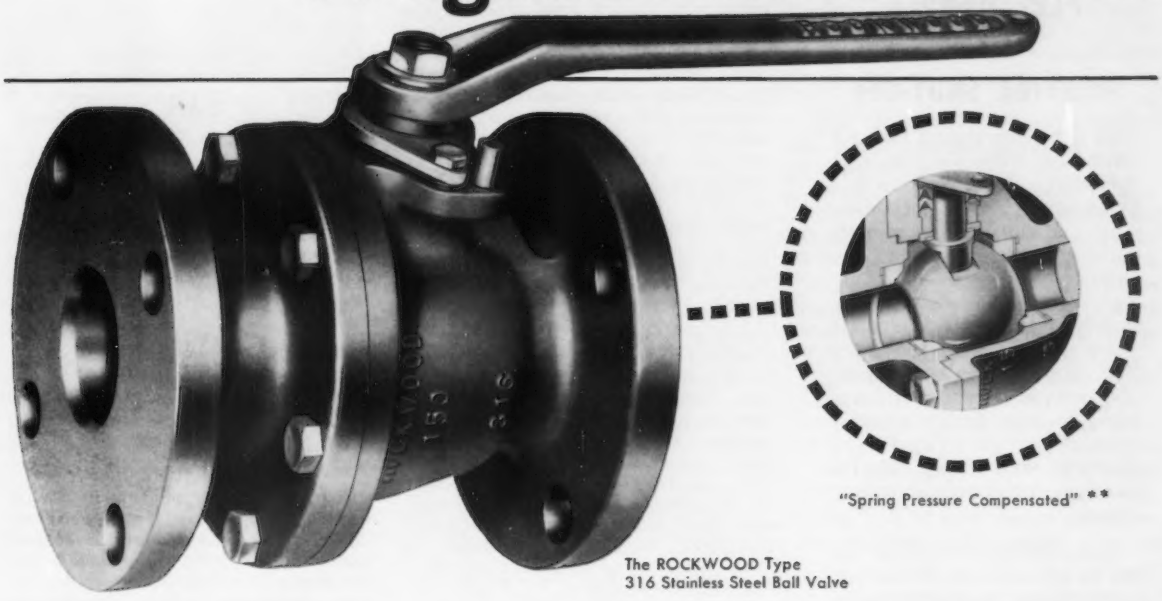
These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Nov. 28	Nov. 28	Nov.	Nov.
No. 1 Mixed Paper	$ 7.00/ 9.00	4.00/ 7.00	6.00/ —	12.00/ —
No. 1 News	12.00/ 13.00	11.00/ —	13.00/ —	12.00/ —
Overissue News (Lg. size)	11.00/ 13.00	9.00/ 11.00	18.00/ —	18.00/ —
Mill Wrappers	19.00/ 22.00	9.00/ 11.00	9.00/ —	13.00/ —
Old Corrugated Containers	19.00/ 20.00	17.50/ 18.00	20.00/ —	19.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	30.00/ —	55.00/ —
New Double Kr. Ld. Corr. Cuts	27.50/ 30.00	32.50/ 35.00	32.50/ —	35.00/ —
(Semi-chem. medium)	45.00/ —	45.00/ —	42.50/ —	— / —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	60.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 65.00	52.50/ —	50.00/ —
New Br. Kr. Bag Waste Unprintd.	60.00/ 65.00	65.00/ 70.00	60.00/ —	55.00/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	23.50/ 27.50	12.00/ —	32.50/ —
White Newsblanks	42.50/ 45.00	47.50/ 52.50	30.00/ —	55.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	50.00/ —	75.00/ —
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	65.00/ —	— / —
Hd. White Shvs.	85.00/ 90.00	90.00/100.00	85.00/ —	95.00/ —
Hd. White Env. Cuts	100.00/105.00	110.00/115.00	90.00/ —	113.00/ —
Col. Tab. Cards	42.50/ 45.00	42.50/ 45.00	45.00/ —	40.00/ —
Manila Tab. Cards	62.50/ 65.00	62.50/ 65.00	60.00/ —	65.00/ —
No. 1 Col. Ledger	32.50/ 35.00	32.50/ 37.50	40.00/ —	27.00/ —
White Ledger	45.00/ 50.00	47.50/ 52.50	50.00/ —	55.00/ —
Mixed Book & Mag.†	— / —	— / —	12.50/ —	— / —
No. 1 Books‡	16.50/ 19.00	22.00/ 24.00	27.50/ —	10.00/ 12.00

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

NEW...

Today's "Tightest" and Toughest Ball Valve!



"Spring Pressure Compensated" **

The ROCKWOOD Type
316 Stainless Steel Ball Valve

Here's the new 316 stainless steel ball valve that not only gives you maximum corrosion resistance, but also *positive* assurance of leakproof service!

It's Tightest because exclusive spring rings back up its twin Teflon* seats . . . *automatically* compensate for pressure variations, wear, cold-flow deformation and temperature effects. With flow in either direction . . . under vacuum or 600 psi . . . seats always hug the ball.

It's Toughest because it's made with integrally cast flanges or screw ends. They *stay* leakproof even under constant vibration.

You get all the other ROCKWOOD features, too: smooth, full round flow; easy ¼ turn opening and closing; dead tight sealing without lubrication; and many more. For use at temperatures from −65°F to 350°F, the Type 316 can be easily modified for cryogenics applications. Always tight in vacuum service, too. Handles air, alcohols, fuel and inert gases, water glass and many other fluids. For service up to 600 psi. 4 models available. Sizes ⅜" through 2". Send coupon for complete details. Tested and listed by Underwriters' Laboratories, Inc.

*DuPont Reg. T.M. Teflon seals include seats and adjustable chevron stem packing. Also available with nylon or synthetic rubber seals.

**Patent Pending

ROCKWOOD BALL VALVES

FULL, ROUND FLOW

Distributors in all principal industrial areas

ROCKWOOD SPRINKLER COMPANY

A Division of The Gamewell Company • Subsidiary of E.W. Bliss Company

1012 Harlow Street, Worcester 5, Massachusetts

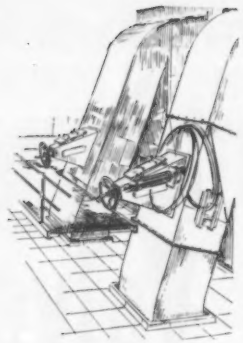
Please send full details on the new Type 316 Stainless Steel Ball Valve

Name ..... *Title* .....

Company .....

Street .....

City ..... *Zone* ..... *State* .....



FLUE DAMPER HAS POSITIVE SHUT-OFF

This drawing shows two SF leakproof Flue Dampers in operation. The unit in the foreground is a phantom view showing the unique seating arrangement of the patented Damper. By turning the handwheel (a remotely controlled electric drive is available, too), the disc, now in the open position, moves forward and upward to seat firmly against the circular portway in the diagonal wall. Spacious inspection doors provide ready access.

Their design fits SF Dampers to an endless number of applications: in electrostatic precipitators for soda recovery unit flue gases . . . in boiler furnace plants . . . economizers . . . scrubbers . . . and wherever effective and positive dust shut-off is essential. They are a strong link in the plant economy chain, as the sealing surfaces are well protected from particle deposits, and down-time for cleaning and maintenance is negligible.

Twelve standard sizes are available for flow rates from 6,000 to 250,000 cfm. Standard-type will operate at temperatures up to 900°F. Write us for a brochure.

★

AMERICAN SF PRODUCTS, INC.

420 Lexington Avenue, New York, N. Y.

SF Products Canada Ltd.,

940 Cote de Liesse Road, Montreal

PJT NEW LITERATURE

Air-Dried Plastic Coating

Describes "Plasite No. 7155," an air dried protective coating (cures at room temperature) for use as a lining for tanks, both large and small for storage or handling of "high purity" water at elevated temperatures in the 200 F. range. Records of six years of service in hot water storage tanks, condensate receivers, and similar applications are included. This coating also has resistance to high temperature brine, caustic solutions and solvents. Technical Bulletin M-7. Protective Coating Corp., Green Bay, Wis.

Bellows Differential Pressure Transmitter

Outlines features, specifications and ordering information. This instrument combines economical, convenient pneumatic transmission with a dry type bellows meter body. Can be used in any flow or open or closed tank liquid level application to transmit readings from a field location. Available with a concentric scale for local indication at point of measurement or as a non-indicator. 4pp. specification S230-1, Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne and Windrim Avenues, Philadelphia 44, Pa.

Goulds Centrifugal Pumps

Contains specification data on casing, frame, impeller, stuffing box, bedplate, shaft, gland, rotation and construction. Model 3199, two sizes: 1x1-5 and 1x1½-6, heads to 150 feet, capacities to 115 g.p.m. Supplied in 316 stainless, GA20, all bronze, bronze fitted, and iron. 4 pp Bulletin #720.5. Goulds Pumps, Inc., Seneca Falls, N. Y.

Packaging and Paper Converting Adhesives

Details features and physical and chemical properties of the adhesives. The five brands are: Seban, Armodex, Driflex, Armoglu, Flexglu, all aids to packaging problems. 16pp Catalog. Industrial Adhesives Div., Armour Alliance Industries, 16123 Armour St., N. E., Alliance, Ohio.

Engineering and Application Data

Contains up-to-date information on overhead materials handling. Various types of carriers, cranes, tractors, track switches, grabs, electrification are described. Detailed studies of track design, peening and stresses are given. A large number of photographs. 12 pp. Booklet No. 2008-Q. Cleveland Tramrail Div. of The Cleveland Crane & Engineering Co., Wickliffe, Ohio.

Suction Press Rolls

Describes such properties and advantages, as chemical and temperature resistance, hardness range, pressures and thickness of its roll coverings. 2 pp. Catalog, Product Service Dept., Stowe-Woodward, Inc., 181 Oak St., Newton Upper Falls, Mass.

Rulon Chemical Resistant Floors, Linings and Coatings

Describes such properties and admaterials and their applications, solving all problems for safe, long lasting floor coverings. 8 pp. Bulletin No. 604. Ralph V. Rulon, Inc., 3900 N. Second Street, Philadelphia 40, Pa.

Horizontal Split Case Pumps

Covers AWW Figure 4000 Single Stage and Figure 4400 Two Stage Centrifugal Pumps used in water treatment plants, industrial plants, and other applications, including cutaway illustrations, specification data, dimensional drawings and tables, and installation photos. It also features helpful Charts to simplify selection for application. 8 pp. Bulletin No. 416, Water Equipment Division, American Well Works, Aurora, Ill.

Vertical Two-Stage Split Case Centrifugal Pump

Illustrates Type AJV which retains the proven performance features of the Type AJ Horizontal Split Case line. Provides streamlined liquid flow, hydraulic and dynamic balance, maximum ease of maintenance or inspection without disturbing the suction or discharge piping connections. Capacities range to 1400 g.p.m. and heads to 425 feet. Bulletin, Aurora Pump Division, The New York Air Brake Co., Aurora, Ill.

Vertical Compressor Package

Describes its complete line of Vertical Package Compressors, standardized for 125 psi in sizes 50 to 2000 hp. Model VS covers packaged compressors to 973 CFM for Belt or Direct Drive. Model VE covers packaged units to 13,400 CFM for Direct Drive. 8 pp. Catalog, V-100, Bury Compressor Co., Erie, Pa.

PT NEWS OF SUPPLIERS

H. L. Roszell, Jr.

T. C. Garren

A. E. Staley Manufacturing Co., Decatur, Ill., has announced two promotions in the company's paper industry sales department serving the paper, corrugated, building materials and related industries. Herbert L. Roszell, Jr., was promoted to manager of dextrin and adhesive products. Thomas C. Garren was promoted to sales service supervisor.

Mr. Roszell joined Staley's in 1949 as a technical representative in industrial sales, and has been a technical assistant in the corn division since 1955. He attended Bradley University and graduated from the University of Illinois.

Mr. Garren joined the company in 1953 as an associate research chemist, and has been a technical assistant in the industrial sales department since 1955. He is a graduate of Iowa State University.

Stauffer Chemical Co. has appointed L. Hunt Myers manager of the Sales Development and Technical Service departments, Industrial Chemicals Division.

Mr. Myers, a chemistry graduate of The College of Wooster, Ohio, joined Stauffer in 1951.

Stanley Steel Strapping, division of The Stanley Works, New Britain, Conn., has appointed Edwin H. Graves of Seattle sales representative in the State of Washington.

Mr. Graves has had intensive training both in the factory and field in the material handling uses for strapping.

Previous to his employment with Stanley, he was connected with the Seattle sales offices of the U. S. Steel Corp. and other Seattle industrial and commercial organizations.

Dewey and Almy Chemical Division, W. R. Grace & Co., announced that Jack W. Long of West Acton, Mass., has joined the Organic Chemicals Research Laboratory as a research chemist.

Mr. Long, who will be engaged in paper coating research, was formerly with Potlatch Forests, Inc., Pulp and Paper Division, and has also served with the Bakelite Co.

Albany Felt Co., Albany, N. Y., has promoted three experienced feltmakers to the positions of technical consultants reporting directly to Everett Reed, vice president of manufacturing.

William LaMore, Charles Sedgwick and Charles Saimond have been named to the consulting posts and will also be responsible for the solution of technical problems in felt manufacturing and the investigation of new machinery. This will make their wealth of technical know-how combined with practical experience in yarn manufacturing and fabricating available to Albany Felt plants in Albany and Hoosick Falls, N. Y., North Monmouth, Me., and St. Stephen, S. C., as well as the felt company's foreign divisions in Canada and Mexico.

American Cyanamid Co., New York, has appointed S. George Manolakis of Wilmington, Del., sales representative for its Pigments Division.

Mr. Manolakis, who will be located at the company's Philadelphia office, is a native of Wilmington and was graduated from the University of Delaware in 1957. Following his graduation, he joined the Pigments Division in Bound Brook, N. J. His most recent assignment was assistant to the regional manager in Chicago.

The Louis Allis Co., Milwaukee, has announced the purchase of the Dynapar Corp., Skokie, Ill.

Dynapar, founded in 1952, manufactures custom electronic equipment including Preset Digital Controllers, Transistorized Clutch Position Compensators, Length Controllers, Draw Elongation and Speed Indicators and Transducers used extensively in the steel, aluminum, paper, film, plastic, synthetic fiber, rubber and other process industries.

John W. Allis, president of Louis Allis, commented, "This acquisition is the first step in our long range program of expansion and diversification. It is of particular significance because it marks our entry into the

"Must you be in the paper business 24 hours a day, Max?"

CHAS. T. MAIN, INC.
ENGINEERS
PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION
PULP AND PAPER MILLS
STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING REPORTS, CONSULTATION, VALUATIONS
●
BOSTON, MASSACHUSETTS
CHARLOTTE, NORTH CAROLINA

LOCKWOOD GREENE
ENGINEERS
Site Investigations, Design and Construction Supervision
PULP AND PAPER MILLS
Steam, Electrical, Water, Waste Reports, Appraisals
MONTGOMERY BLDG. SPARTANBURG, S.C.
NEW YORK BOSTON

PAPER TRADE JOURNAL is always mailed on Friday and should be received in most parts of the country early in the week. If there seems to be undue delay in receiving your copy, we suggest that you write your local postmaster, with a copy to the postmaster at East Stroudsburg, Pa., where we mail, and a copy to us.

field of electronic equipment used so extensively in industrial and military applications. Dynapar electronic controls open broad new growth opportunities for us. They can be marketed not only as a separate and distinct product line but also in conjunction with our adjustable speed drive equipment. The combination of the two lines permits us to offer to all those industries requiring automated processes a more complete line of adjustable speed drives. Our national sales organization will aggressively market these new products to industries that we have not reached before. There is an ever expanding market potential for this equipment as well as our own product lines."

James E. Everett, founder and president of Dynapar, will be manager of sales and engineering for the Dynapar Corp. No change in personnel or location is anticipated.

National Starch and Chemical Corp. has joined forces with Jordan Chemical Works (A'sia) Pty., Ltd., Sydney, Australia. Frank Greenwall, chairman of the board of National, announced the formation of a new company, Jordan-National Co., Pty., Ltd., mutually owned by National and Jordan. Jordan-National will manufacture and sell vinyl polymers and various adhesives made in the United States by National. Manufacturing facilities and executive offices will be located in Sydney. Max Glaser, managing director of Jordan Chemical Works, will also serve in a similar capacity for the new concern.

Mr. Jordan is a leading producer in Australia of synthetic resins and chemicals which are sold principally to the printing ink, paint and surface coating trades. It is a publicly owned company and enjoys a high reputation in Australia.

National Starch and Chemical is a leading producer of vinyl acetate polymers and copolymers, starches, packaging and structural adhesives, and in addition to operating nine plants in the United States also has manufacturing operations in Canada, England and Mexico.

Union Carbide Plastics Co., division of Union Carbide Corp., has assigned Robert M. Lewis as a technical representative in the Metropolitan New York sales region. Mr. Lewis will handle the sale of Bakelite Brand plastics for flexible packaging applications with particular emphasis on polyethylenes for extrusion coating. He will be located at the company's Clifton, N. J., office at 1051 Bloomfield Avenue.

F. R. Convey

R. H. Austin

John W. Bolton & Sons, Inc., and **The Emerson Manufacturing Co.,** Division, Lawrence, Mass., has given F. Richard Convey, general sales manager, the added responsibilities of directing sales for the Bolton Machine Knife Division.

Arthur G. Schwarzenberg continues as manager of the Machine Knife Division and C. E. Scollard as field sales manager. Bolton makes knives for the pulp and paper, graphic arts, plastics, metalworking and woodworking industries. The move was made to centralize control and coordinate all Bolton-Emerson sales activities.

Huyck Felt Co., Rensselaer, N.Y., and Aliceville, Ala., has announced the promotion of Rupert H. Austin, Jr., from field service engineer to felt sales engineer for Connecticut, Rhode Island and portions of Massachusetts, New Hampshire and Vermont. He replaces Warren Naugler who has been promoted to another division of the Huyck Corp. Prior to joining Huyck, he worked for Strathmore Paper Co. and the National Aniline Division of Allied Chemical and Dye Co.

The Felt Cleaning Selectograph, developed by Mr. Austin while serving Huyck as a field service engineer, is now being widely used by paper mills to determine recommended shutdown washing procedures for specific felt plugging problems.

Alvin H. Johnson & Co.
INCORPORATED
Consulting and Designing Paper Mill Engineers
415 LEXINGTON AVENUE NEW YORK 17, N. Y.
PAPER MILL DESIGN PROCESS ENGINEERING POWER PLANTS
STRUCTURAL AND ARCHITECTURAL DESIGN
REPORTS APPRAISALS ESTIMATES AND SURVEYS

AMERICAN AND ENGLISH CLAYS

FOR ALL PAPER MAKING PURPOSES

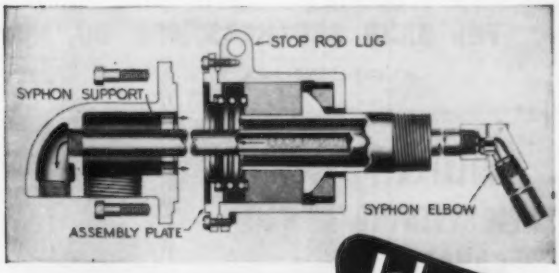
ANGLO-AMERICAN CLAYS CORP.

(Formerly: English China Clays Sales Corporation)

6 East 45th Street, New York 17, N. Y.

Rotary Joint Headquarters

★ Johnson started the whole idea. Today's *complete* line includes sizes from ¼" to 8" . . . self-supported, pipe-supported, or rod-supported . . . for stationary or rotating syphon pipe . . . all operating speeds and pressures . . . for paper machines, calenders, corrugators, waxers, embossers, roofing machines, printing presses.



Type SDP shown. Hinged syphon elbow replaces unwieldy curved syphon pipes with two straight pipes. Newest Johnson development is the Quick Release nipple. Write for Bulletin S-3001.

Johnson Rotary Pressure Joints

First in the Paper Industry

THE JOHNSON CORPORATION
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SINCLAIR
Custom-Made Cylinder Moulds improve Paper Quality

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Manufactured specifically for each individual job. Bronze spiders cast in our own foundry, finest rods of sufficient numbers to make a perfect surface, winding wires properly selected, plus our own wire cloth coverings engineered for each order mean a Cylinder Mould that has years of wear in it. Cylinders of Stainless Steel are a specialty with us too.

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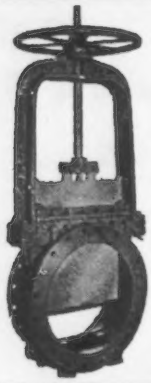


RECORD PAPER & PULP STOCK VALVES "BONNETLESS" SELF CLEARING - - - "RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M. all iron, bronze or stainless steels. body parts plain or rubber lined.

The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

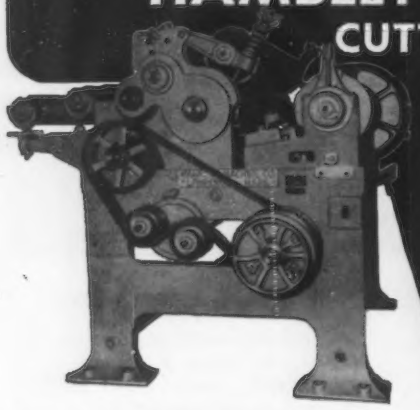
- The "FAST THREADED" screw stem and ball bearing speeds valve operation.
- The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.
- The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
- Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

"RECORD PRODUCTS EXTENSIVELY USED IN DEFENSE PROJECTS"

RECORD FOUNDRY & MACHINE COMPANY

LIVERMORE FALLS, MAINE, U. S. A.

★ HAMBLET ★ CUTTERS PRODUCE



Heavy Duty: Single and Duplex from 100" to 200" wide. Knife capacity 450 pounds. Speeds to 600 feet per minute. Also used on special heavy cutting applications below 100" width.

Also
- LAYBOYS
- BACKSTANDS

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THE BAHR BROTHERS MFG. CO.

MARION, INDIANA, U. S. A.

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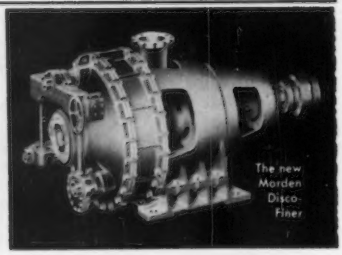

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Engineering break-through provides, in one machine, amazing precision, tremendous production capacity, versatility that defibers or refines.

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by William Bond Wheelwright

This book begins with a survey of "Progress in the Paper Industry" and ends with a list of books recommended for collateral reading. The intermediate chapters are entitled: "How to Judge Paper"; "Physical Aspects of Paper"; "Practical Manual and Visual Tests"; "Essential Facts About Papermaking"; "Coated, Glazed and Specialty Papers"; "Permanence of Paper"; "Paper Difficulties in Converting"; "Paper as a Medium for Printing"; "Letterpress Printing"; "Offset Lithography"; "Intaglio Processes."

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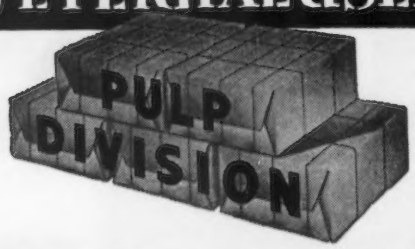

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$5,000 to $50,000

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Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing THE SPECIFIC SITUATION that most exactly fits the needs of each individual we serve.

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WANTED

Mechanical Engineer with at least two years' experience for position in Engineering Department of Tennessee pulp and specialty paper mill. All phases of general engineering, one plant location, on TVA lakes, two life insurance policies, excellent surgical and hospitalization policy and liberal pension plan—all at no cost to employee. Reply with picture, complete educational and occupational backgrounds to Box 60-230 care Paper Trade Journal.

D-5

TECHNICAL

SALES — SERVICE

Reside New England. Work from Home Representing Manufacturer Paper Coating and Filler Pigment. Experience Paper and Coating Desired. Also Willingness Travel other Areas as Required. Send Resume, Photograph and Salary Required which will be Treated in Strict Confidence.

Address Box 60-222 care Paper Trade Journal.

J-23

BETTER POSITIONS

$6000 to $35,000. Want a substantial salary increase, more opportunity or different location? This national 49 year old service connects you with best openings. You pay us only nominal fee for negotiations; This we refund when employer pays placement fee. Present position protected. In complete confidence, write for particulars. R. W. Bixby, Inc., 563 Brisbane Bldg., Buffalo 3, N. Y.

D-5

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FOR A WELL KNOWN, INDEPENDENT MANUFACTURER AND CONVERTER OF HEAVY PAPERBOARD PRODUCTS, MOSTLY LAMINATED, AND SUBSIDIARY CHEMICAL OPERATIONS

A BROAD GAUGE, PROFIT-MINDED CHEMICAL ENGINEER OR CHEMIST STRONG IN R. & D. COORDINATION AND ADMINISTRATION

TO SERVE AS

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$12,000-$15,000 Start

Man Selected Can Become V.P. of R. & D. in Two Years

Client mill, an honored name in the laminated wood fibre panel field for decades and more recently a coming factor in specialty chemical products, has reached the point in its carefully thought out program of basic research, product improvement and corporate diversification where the Board of Directors feel it essential to centralize the control of all technical activities. Accordingly, a new staff position is being created, as above captioned.

Needed here is what we call a practical scientist—a profit-minded, sales conscious technical executive who can and will work hand-in-glove with top management and other department heads and see to it that the company gets the maximum return from its not inconsiderable technical budget.

Man selected will be directly responsible to the President and will carry the full authority of the chief executive office in every move he makes. If, as and when he proves to the top executive structure—this could happen in less than two years—that he is entitled to take his place at a policy making level, he will be named Vice President of Research and Development.

Make confidential written inquiry in duplicate to Mr. George M. Sunday personally, enclosing two pictures and two copies of comprehensive resume covering vital statistics, education, technical affiliations and chronological treatment of business background and experience, including present and past earnings. Telephone conference will follow, at which time cogent details will be revealed and arrangements made for subsequent personal interview at client's expense.

SUNDAY, INC.

Personnel Consultants to Management

Pulp, Paper, Packaging and Allied Industries

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D-5

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FOR MODERN TWO-MACHINE MILL

OPERATING ONE STRAIGHT FOURDRINIER ON FINE AND KRAFT GRADES 30 TO 200 LBS. AND ONE 126" BELOIT FOURDRINIER PICK-UP COMBINED MACHINE WITH PRE-DRIERS AND YANKEE ATTACHMENT PRODUCING LIGHT-WEIGHT PAPERS 10 TO 35 LBS. AT HIGH SPEEDS.

OPERATING EXPERIENCE WITH COMBINED MACHINE IS ESSENTIAL.

EXCELLENT SALARY AND LIVING CONDITIONS ON A CONTRACT BASIS FOR QUALIFIED PERSONNEL.

COMPLETE DETAILS OF EXPERIENCE AND NAMES OF FORMER EMPLOYERS SHOULD BE FORWARDED TO:

AMERICAN ISRAELI PAPER MILLS LTD.

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D-12

HELP WANTED

Chemical, Electrical, Mechanical and Instrumentation Engineers interested in locating in the finest papermaking community in the Midwest are needed at Allied Paper Corporation, Kalamazoo, Michigan. This is a university town with three schools and more than 10,000 college students. Night classes are popular. We have two excellent high schools, one of which is brand new. Our amateur theater operates eight months per year. Two summer theaters are close by. New library facilities and a million dollar art center now under construction are definite advantages. Our many lakes and streams makes this community an outdoor paradise both summer and winter. Civic pride and community interest runs high in this town. If you are a determined person and have experience in the manufacture of pulp and paper or specialized experience in coating, you will find opportunities at Allied. Address 60-252 care Paper Trade Journal.

D-12

Technical Director

wanted for a Progressive Western Fine Grade Paper Co. If you have had experience as a Technical Director together with a wide experience in coating formulations and their applications both on and off machine, size presses etc., then send us a brief resume of your work history and references. Address Box 60-233 care Paper Trade Journal. D-5

Board Mill Superintendent

We are looking for a man with experience on multi-cylinder board machines. He may already be a board mill superintendent or assistant; a tour boss or a thoroughly experienced machine tender. Our one machine mill is located in the Niagara Peninsula. Address Box 60-235 care Paper Trade Journal.

D-19

GIBBS-BROWER CO., INC.

10 Depot Plaza, White Plains, New York

Established 1898

Telephone—Rockwell 1-1130

BRANCHES: 400 Wash. Building, Madison 3, Wisconsin

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PRINTING PRESSES

2—Hy-Rotos: 1-26" 3-color & 1-30" 3-color
1—41⅜" 5-color Staude Roto Gravure Press
1—51" 3-color Flexo Press
1—42" 4-color Hudson Sharp Central Impression Cylinder Flexo Press
1—42" 4-color Crawford Flexo Press
1—40" 6-color W & H Flexo Press
1—40" 4-color W & H Flexo Press
1—36" 6-color Cottrell Heinrich Flexo Press
1—33" 6-color Modern Clipper Flexo Press
1—33" 4-color Wolverine Hydro-Printer
1—32" 3 color Flexo Tail Printer
1—32" 4-color Schmutz Bag Press
1—24" 5-color Kidder Calloprinter
1—14" 4-color Waldron Gravure Press

POWER PAPER CUTTERS

SEYBOLDS:	56"-Dayton	44"-Dexter
	50"-Precision	44"-C&P
	50"-Mod. "CF"	44"-Oswego
84"-8Z	44"-Mod. "CF"	44"-10Z
75"-Oswego	40"-Mod. "CF"	38"-Oswego
64"-Precision	50"-C&P	32"-Oswego
57"-Oswego	50"-Dexter	32"-3Y

CAMACHINES

1—162" Type 10 Model 19 Shear Cut
1—102" #18
1—87" Type 12
1—72" Type 10 6A
1—62" 26-3A
1—72" 10-10A
1—62" 10-11A
1—62"—28-38T
1—52" 10-5A
1—52" & 1—42" Model 24-7
1—50" 28-3D
1—42", 50" & 62" Type 6
1—32" 26-3A

OTHER SLITTERS

2—82" Langston: 1—"BA" & 1—"B"
1—65" S & R (Similar Kidder Model C.W.)
1—60" & 1—40" Fales Model "C"
1—40" & 1—52" Fales Model "B"
1—60" Langston Type A
1—60" Inman With Reeves Drive
1—52" Moisel (Shear-Cut)
2—40" Beck Razor Blade Slitters
1—40" & 1—60" Kidder SH 40" rewind
1—40" Langston "Type A" (Shear-Cut)
1—24" 1—30", 1—36" & 1—40" Kidder S.L. & 1—36" SLN

MISCELLANEOUS MACHINES

2—New 3 Deck Hudson Sharp 10 x 10 Cocktail and Hanky Machines
1—30" Schultz Rewinder with Electronic Drive
1—Multipath Bag Machine—4 Color Holweg Printer
1—Honsel Millinery Bag Machine (Model S-50) Wide Range & 3 Color Printer
1—(Round & Square) Butter Chip Machine
1—48" Schultz Rewinder
Lawtomatic Towel & Tissue Wrappers
1—Hayssen 4-roll Toilet Wrapper
1—Strachan & Henshaw Bag Machine—2-color Aniline Printer
1—Beasley French F&S Bag Machine
1—34" Waxer with 4-Ton Refrig. Unit
1—36" and 1—45" CCSH Back Sheeter
1—166" Clark-Aiken Duplex Sheeter w/layboy
1—100" & 60" Hamblet w/layboy
1—75" Hamblet Duplex—Erie Layboy—Overlapping Delivery
1—Simplex 7-24 Pouch Machine
1—Matador Model #31 Bag Machine
2—Model 4 Potdevin Sack Machines
2—38" x 24" 4-Post Seybold Die Presses
5—Sheridans: 66" x 44", 60" x 30", 50" x 24", 44" x 22" & 36" x 18" and 1—Ford-Smith: 48" x 40" and 2—Hobbs 24" x 44"
Embossers 48", 38", 32" & 50" Heavy Duty Hudson Sharp Tinter-Embosser
1—40½" Hudson Sharp Toilet Interfold

D-5

BARKING DRUM

1—12 ft. diameter x 45 ft. long

BEATERS

2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54" x 48", cast iron tubs.

CALENDER STACKS

1—3 roll 84" face
1—4 roll 72" face. (Extra heavy duty)
1—5 roll 82" face.
1—5 roll 86" face

CHIPPERS

1—96" Murray 4 knife Chipper—anti-friction bearings.
1—84" 10 knife Casthage Chipper. Anti-friction bearings, with motor

COATER

1—42" Chapman Extrusion Type Coater

CONSISTENCY REGULATOR

1—Poirier Stainless Steel, new condition

CRUSHER & HAMMERMILL

1—Murray Chip Crusher.
1—Williams Hammermill.
1—Jeffrey Shredder.

CYLINDER MOLDS

5—36" diameter x 75" face, with couch rolls
1—36" diameter x 82" face.
4—36" diameter x 90" face, with couch rolls.
1—42" diameter x 96" face
2—42" diameter x 106" face
2—60" diameter x 170" face.

DECKERS

2—IMPCO Deckers (Thickeners) 48" diameter x 100" face, late type.

DRIVES

1—Jones 21 H.P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive.
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 H.P.)
2—Falk Drives, 20 h.p. & 160 h.p.

DRYERS

1—16" diameter x 54" face (steel).
1—28" diameter x 84" face.
1—28" diameter x 48" face.
2—Calender Dryers, bronze, 30" x 128" with frames, gears & necessary rolls to make up the unit.
1—36" diameter x 44" face.
5—36" diameter x 76" face.
23—36" diameter x 84" face.
14—48" diameter x 48" face with bearings.
2—48" dia. x 52" face with frames, gears, bearings
2—48" x 60" face frames, gears & bearings
1—48" x 96" face.
6—48" diameter x 130" face.
1—60" diameter x 92" face, anti friction bearings.

EMBOSSING CALENDERS

1—[illegible]" 3 Roll Embossing Calender.
1—48" 2-roll Meadows Embossing Calender
1—51½" 3-roll Smoothing Calender.
1—57" 3-roll Embossing Calender.
1—62" 2-roll Embosser.
1—90" 2-roll Smoothing Calender.

FILTER

1—Dorr-Oliver Filter, 3 ft. dia. x 6 ft. face, stainless steel construction, with pump.

FLAT SCREENS

1—12 Plate "Packer"
4—14 Plate IMPCO, bronze vats

JORDANS

1—#1 Jones High Speed Jordan
1—Jones Standard, new spare tackle, with 75 h.p. motor.
1—Noble & Wood Monarch, Type D, anti friction bearings.
1—Noble & Wood Baby Jordan, anti friction bearings, with 20 h.p. motor.
1—#6 Miami, anti friction bearings.

KNIFE GRINDER

1—70" Seybold.

LABORATORY EQUIPMENT

1—4" face x 36" diameter Saveall
1—Washer for 5 lb. Beater.
1—24" Saveall, stainless steel.
1—20" Fourdrinier Wet End & Press Section.
1—12" x 12" Valley Sheet dryer.
1—18" x 20" Williams Sheet Dryer
1—15 lb. E. D. Jones Beater.
2—Noble & Wood Cycle Beaters with motors & stands
1—1½ lb. Valley Iron Works Beater, motor and stand.
1—Greene Freeness Tester.
1—Cady Micrometer.
7—Mullen Testers, motorized.
1—2 qt. Auto Clave. Stainless Steel.
2—Elmendorf Tear Testers.
1—27" High Solid Coater.
1—Noble & Wood Baby Jordan, anti friction bearings, with 20 h.p. motor.
2—Emerson, Jr., No. 1 Jordans, anti friction bearings.

MISCELLANEOUS

1—Bird Centrifiier, built 1958, new condition.
1—Shartle Hydrafuge, 1000 g.p.m. (with motor)
3—Bird Centrifiiers, stainless steel.

MOTORS

4—25 h.p. Westinghouse, totally enclosed, ball bearing, 705 r.p.m

PRESSAFINER

1—7" Pressafiner, stainless steel construction, new 1955, with new spare motor.

PRESS ROLLS

2—Chilled iron, chrome plated 9" x 72".
1—Chilled iron, chrome plated 10" x 74".

PULPERS

1—#1 Jones Pulp Master.

PUMPS

1—Economy Fan Pump 6000 g.p.m., 20' head, 50 h.p. motor.

REELS

1—72" Downingtown Reel, 2 bowl.
1—84" 3 bowl revolving reel.
1—86" 2 bowl reel.
1—100" Rice Barton 2 bowl Reel, heavy duty.
1—116" Downingtown, 2 bowl, anti friction bearings.
1—123"—3 bowl Revolving Reel.
1—134" 2 drum.

REFINERS

1—Rice Barton Dynofiner, details on request.
1—12" Wiener Refiner, with 200 h.p. motor.
2—36" Bauer double disc #185E Refiners, each with two 100 h.p. motors.

ROLLS

Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS

4—#2A Bird Rotary Screens, copper vats.
7—Trimbey, Senior Knotter Screens.
1—#2A—50 Bird, copper vat.
2—APMEW Rotary Pulp Screens.

SAVEALLS

1—#6 Bird Saveall.
1—24" Continuous Saveall, stainless steel.
1—LaMort 48" diameter x 82" face cylinder mold.
2—Savealls, cylinder molds, 42" diameter x 106" face, brand new vats.
2—Savealls, Rice Barton, cast iron vats, cylinder molds 48" diameter x 128" face, complete with 18" diameter couch rolls, all in very good condition.

SHREDDERS

1—16" "Swift" Paper Shredder.
2—Taylor Stiles Rag Cutters.

SLITTERS & WINDERS

1—26" Cameron Type 26-2A, complete constant tension & electric eye
4—42" Cameron Type 6.
1—42" Cameron Type 26-2A.
1—42" Cameron Type 40-2.
1—50" Cameron Type 6.
3—52" Cameron Type 9
1—62" Cameron Type 6
1—72" Cameron Type 28-3-D
1—86" Two Drum Moore & White 50" diameter rewind.
1—96" 4 drum Moore & White winder.
1—64" Waldron, Shear cut.

SLITTING DEVICE

84" Quick change slitting device shear cut, complete

STOCK PUMP

1—12 x 20 Shartle Triplex, with spare parts.

SUCTION COUCH SHELL

1—Downingtown suction couch shell only, 127½" face 26" diameter.

SUCTION COUCH ROLL

1—Beloit, 36" diameter x 246" face, SKF bearings.

SUCTION FELT ROLL

1—Gilbert & Nash 122" face.

SUCTION PRESS ROLL

1—Sandusky 18" dia. x 138" face Suction Press Roll.

SUPER CALENDER STACKS

1—9 Roll 56"
1—13 roll 53" Norwood, anti friction bearings.

TOILET WINDERS

1—72" Hudson-Sharp (Surface type winder).

TRIMMERS

1—44" Seybold Trimmer

VACUUM PUMPS

2—#3 Nash Hytor.
1—#4 Nash Hytor
1—#7 Nash Hytor, with 75 h.p. synchronous motor.
1—H-3 Nash.
1—K-5 Nash.
2—L-4 Nash.
3—L-5 Nash.
2—Conneraville, 14 x 20.

VATS

2—Brand new Downingtown Iron End Vats, for 42" diameter x 112" face cylinder molds. Will cut down to your size.

WET MACHINES

1—84" IMPCO Wet Machine

YANKEE DRYER

1—60" diameter x 92" Face, anti-friction bearings.
1—12 ft. diameter x 181½" face.

Paddy Ross, Pres.

J. J. ROSS COMPANY

377 Frelinghuysen Ave. Tel.—Bigelow 3-3720 Newark 12, N. J.

PRODUCTION MGR.

Dynamic, growing company in New England wants a man with heavy experience in newsprint and coated paper. Exceptional opportunity. Excellent benefits, including stock option. Salary $18,000/20,000 per year. Send resume in strict confidence to Box 60-239 care Paper Trade Journal.

D-12

PROJECT CHEMIST

Immediate opening for a graduate chemist or chemical engineer, with two to four years experience in the paper industry. Bleached sulphate board mill, located in the Southeast. Salary open, depending upon qualifications. All replies confidential. Send complete resume to Box 60-229, Paper Trade Journal, 49 West 45th Street, New York 36, New York.

D-5

CONTROL ENGRS.

New England manufacturer has openings for:

1. Assistant to control superintendent, 8 to 10 years experience. Starting salary $8,000/10,000 per year.
2. Control engineers, 3 to 5 years experience. Starting salary $6,000/8,000 per year. Excellent opportunity in growth company. Send resume in strict confidence to Box 60-240 care Paper Trade Journal.

D-12

TECHNICAL PRODUCT SALES REPRESENTATIVE

Growth company in the machine clothing field has a fine opportunity for a man who has an interest in, and would like to make a career of, sales and who has the following background:

A. Practical papermaking experience with a knowledge of paper processes, grades and materials; who may or may not have a formal technical education; or

B. Papermaking experience for a period of three to five years with a formal technical education.

All expenses, salary and bonus. Salary and opportunity to advance commensurate with demonstrated abilities and experience. Resumes held in strict confidence. Address Box 60-253 care Paper Trade Journal.

D-26

PULP MOLDING

Company entering structural pulp molding field has openings in R & D. Excellent prospects. Salaries open. CHEM. ENGR. (Equivalent experience) in field of Polymers-Resins-Bitumastic and other binders

ENGINEER (equivalent experience) with pulps, its properties, characteristics, and processing. Also TECHNICIANS. Send one page resume. Lessheim, Hillenbrand Industries, Batesville, Indiana.

D-5

WANTED

Engineer for Sales Work at Midwest Headquarters

of one of the best known manufacturers of a product that is used on most all pulp and paper mill machinery.

Require engineering graduate with some paper mill engineering or maintenance experience under age 35—married.

Address Box 60-254
Care of PAPER TRADE JOURNAL

D-26

The Quality Control Department of a multi-plant specialty paper company with headquarters in Berkshire County, Massachusetts, would like to hire two young, energetic, personable engineers with line managerial potential to join its Staff group. The position primarily involves process trouble-shooting throughout the company's mills while providing excellent background training for future management jobs.

Kindly submit resume and salary requirements to Box 60-??? care Paper Trade Journal.

D-26

CHEMIST

Nationwide Multi-Plant Paper Board and Carton Manufacturer with well established paper mill in Iowa, has immediate opening for a plant chemist. A degree in chemistry or allied field and a minimum of two years experience in mill chemistry with particular emphasis on clay coating is preferred. Excellent promotional opportunities to Regional Research and Management. Reply in confidence giving education, experience and salary requirements. Our employees know of this opening and advertisement. Reply to Box 1033, Hutchinson, Kansas.

D-5

POSITION WANTED

Man available with 23 years diversified paper industry experience; technical pulp & paper education. Paper manufacturing experience includes technical, operation, and sales-service on various grades. Also 10 years technical sales, service, and product development to paper mills. Box 60-248 care Paper Trade Journal.

D-5

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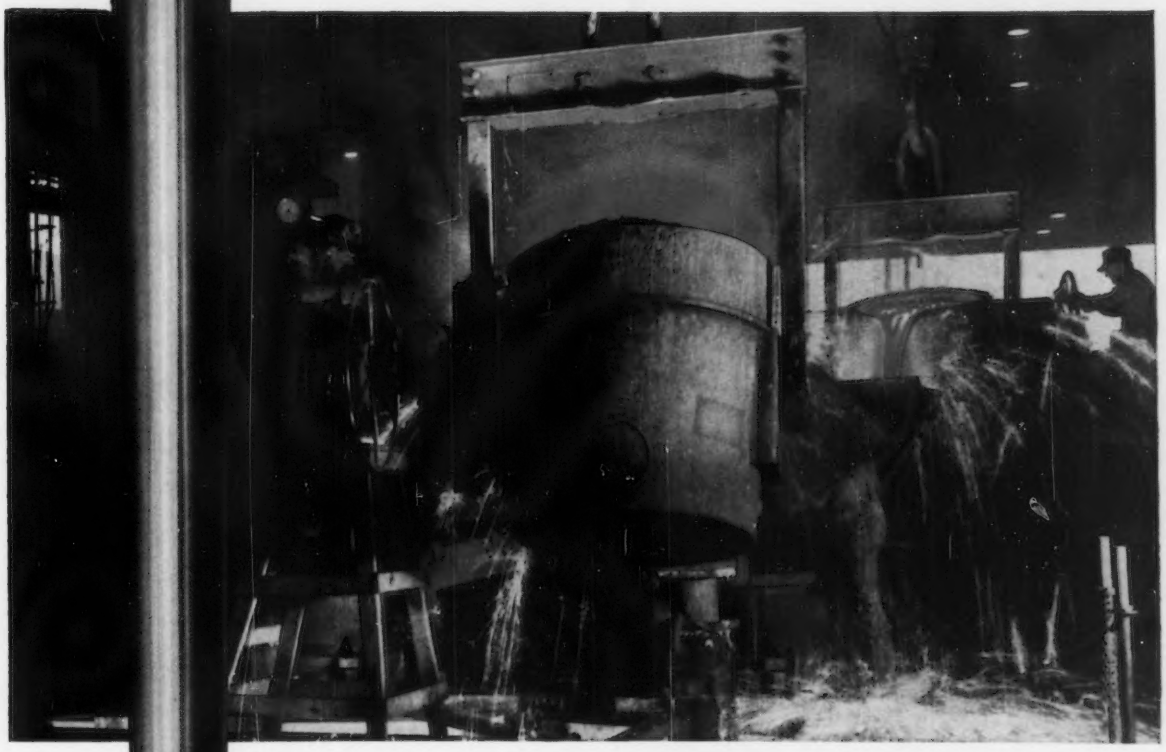

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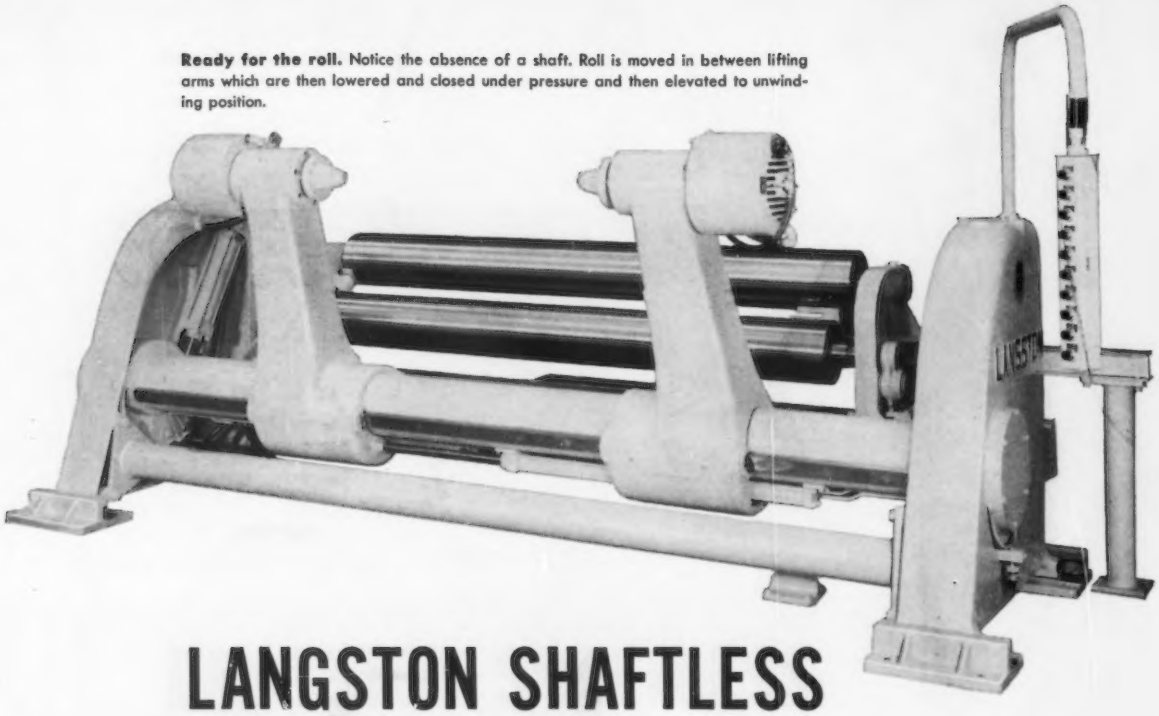

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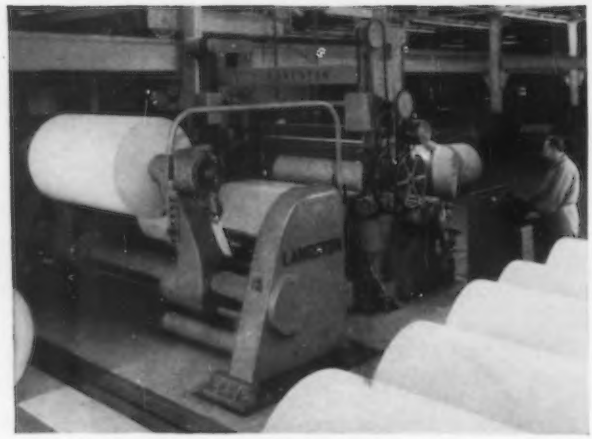

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